PROGRAM

EIGHTY NINTH
ANNUAL MEETING
OF THE
AMERICAN ASSOCIATION
OF
NEUROPATHOLOGISTS

JUNE 20-23, 2013

THE CHARLESTON PLACE

CHARLESTON, SOUTH CAROLINA

This activity is sponsored by the American Association of Neuropathologists

For additional information about the accreditation of this program, please contact the AANP office at 440-793-6565 or via email at aanpoffice@gmail.com

Save the Date

90th Annual Meeting
of the
American Association
of
Neuropathologists

June 12 – 15, 2014

The Nines Hotel

525 Southwest Morrison Street
Portland, OR 97204

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OFFICIAL JOURNAL

Journal of Neuropathology and Experimental Neurology
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Jeffrey A. Golden, Associate Editor
Eileen S. Healy, Managing Editor
E-mail jnen@pathology.wisc.edu
Home page: http://www.jneuropath.com

DIAGNOSTIC SLIDE SESSION

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Mark L. Cohen, MD, *University Hospitals Case Medical Center*, Manager

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TARGET AUDIENCE

The educational design of AANP's Annual Meeting addresses the needs of physicians and scientist in the field of neuropathology who are involved in the diagnosis and/or treatment of patients with neurological disorders.

STATEMENT OF NEED

The purpose of this activity shall be to advance medical and scientific knowledge, understanding, and competence in the practice of neuropathology. The practice of neuropathology is understood to include diagnosis of diseases of the nervous system, scientific investigation into their causes, and teaching of neuropathology principles to colleagues and trainees.

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LEARNING OBJECTIVES

Upon completion of this activity, participants should be able to:

- Cite new information on the underlying causes and mechanisms of neurologic diseases
- Explain the role of contemporary techniques to analyze the pathologic features of neurologic diseases
- Incorporate new knowledge into improving everyday clinical practice and teaching of neuropathology

DISCLAIMER

Participants have an implied responsibility to use the newly acquired information to enhance patient outcomes and their own professional development. The information presented is this activity is not meant to serve as a guideline for patient management. Any procedures, medications, or other courses of diagnosis or treatment discussed in this activity should not be used by clinicians without evaluation of patient conditions and possible contraindications on dangers in use, review of any applicable manufacturer's product information, and comparison with recommendations of other authorities.

CME CREDIT

Physician Accreditation Statement

The American Association of Neuropathologists is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Physician Credit Designations

The American Association of Neuropathologists designates this live educational activity for a maximum of 25.25 *AMA PRA Category 1 Credit(s)™* . Physicians should only claim credit commensurate with the extent of their participation in the activity.

Instructions to Receive Credit:

In order to receive credit for this activity, the participant must complete the CME credit application in the registration packet and return it to the American Association of Neuropathologists office at:

American Association of Neuropathologists
C/o Peggy Harris
25373 Tyndall Falls Drive
Olmsted Falls, Ohio 44138

The chart below details the maximum number of credit hours a physician can earn for each educational activity being certified for *AMA PRA Category 1 Credit™* at this year's Annual Conference.

Activity	CME Credit Hours
Special Course	7
Scientific Sessions	8
Korey Lecture	1
DeArmond Lecture	1
Parisi Lecture	1
Diagnostic Slide Session	3
Presidential Symposium	3.25
What Every Neuropathologist Needs to Know	1
Total	**25.25**

Self-Assessment Module (SAM) Credit:

SAM-CME credit will be offered for the following sessions:

- Special Course
- Diagnostic Slide Session
- Presidential Symposium

To receive SAM-CME credit you must attend the live session and successfully complete the online, post-test, which will be made available on AANP's website soon after the Annual Meeting.

DISCLOSURE INFORMATION:

Disclosure of Commercial Support:

This activity is supported by an educational grant from Teva Neurosciences. "In-kind" support through the donation of microscopes is being provided by Nikon.

Disclosure of Unlabeled Use:

This educational activity may contain discussion of published and/or investigational uses of agents that are not indicated by the FDA. The American Association of Neuropathologists does not recommend the use of any agent outside of the labeled indications.

The opinions expressed in this educational activity are those of the faculty and do not necessarily represent the views of any organization associated with this activity. Please refer to the official prescribing information for each product for discussion of approved indications, contraindications and warnings.

Disclosure of Conflict of Interest:

The American Association of Neuropathologists requires instructors, planners, managers and other individuals who are in a position to control the content of this activity to disclose any real or apparent conflict of interest they may have as related to the content of this activity. All identified conflicts of interest are thoroughly vetted by AANP for fair balance, scientific objectivity of studies mentioned in the materials or used as the basis for content, and appropriateness of patient care recommendations. Complete disclosure information will be provided to learners on-site.

The ***Planners and Managers*** reported the following financial relationships or relationships to products or devices they or their spouse/life partner have with commercial interests related to the content of this CME activity:

The following planners and managers have *Nothing to Disclose*:

Eileen **Bigio**, Daniel **Brat**, Rudy **Castellani**, Elizabeth **Cochran**, Mark **Cohen**, Ivana **Delalle**, James **Dollar**, Kar-Ming **Fung**, Robert **Hevner**, William **Hickey**, Edward **Lee**, David **Louis**, Marta **Margeta**, Maria **Martinez-Lage**, William **McDonald**, Brian **Moore**, Steven **Moore**, Robert **Mrak**, Kathy **Newell**, Suzanne **Powell**, Robert Ross **Reichard**, C. Harker **Rhodes**, Fausto **Rodriguez**, Amyn **Rojiani**, Shahriar **Salamat**, Julie **Schneider**, Suash **Sharma**, Raymond **Sobel**, Anat **Stemmer-Rachamimov**, Jane **Uyehara-Lock**, Karen **Weidenheim**, Charles **White**, Anthony **Yachnis**, William **Young**, Marie **Rivera Zengotita**.

The following planners and managers have the following *Disclosures:*

Thomas **Beach**	**Research Support:** Avid Radiopharmaceuticals/Eli Lilly Corporation, Bayer Healthcare and GE Healthcare. **Other/**P**rogrammatic Support** GlaxoSmithKline, Elan, Janzen, Iperian, Signum, Biogen, HTG Molecular and Neotope.
John M. **Lee**	**Other:** Corneli Consulting
Charles L. **White**, III	**Consultant/Independent Contractor:** Elan Pharmaceuticals. **Honoraria**: Leica Microsystems

The ***faculty*** reported the following financial relationships or relationships to products or devices they or their spouse/life partner have with commercial interests related to the content of this CME Activity

The following faculty have *Nothing to Disclose*:

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The following faculty have the following to *Disclose*:

Charles Eberhart	**Research Support:** Merck**; Other:** Patent License
Pierluigi Gambetti	**Research Support:** Ferring Pharmaceuticals; **Company Advisory Board**: Ferring Pharmaceuticals
Kimmo Hatanpaa	**Consultant:** Alere Pharmaceuticals
Gregory Jicha	**Speaker's Bureau:** Lilly, Quintiles**; Consultant:** Lilly; **Research Support:** Alltech, Baxter, Esai, Janssen, Lilly, Pfizer
Michael Lawlor	**Company Advisory Board**: AVI Biopharma**Stockholder**: Seaside Therapeutics
Peter Mouton	**Consultant/Independent Contractor:** Stereology Resource Center, Inc; **Stock Share Holder**: Stereology Resource Cetner, Inc.;
Sandro Santagata	**Consultant:** Bayesian Diagnostics; **Research Support:** Bayesian Diagnostics; **Company Advisory Board:** Bayesian Diagnostics
Harry Vinters	**Stock Shareholder:** GE, Teva Pharma, Pfizer, Glaxo SmithKline Beecham

GENERAL INFORMATION

Hotel: Charleston Place
205 Meeting Street
Charleston, SC 99401

Phone: 1-888-635-2350

ALL MEETING SESSIONS WILL BE HELD AT THE CHARLESTON PLACE HOTEL

All platform presentations and general sessions (Special Lectures, Korey Lecture, DeArmond Lecture, Parisi Lecture, Business Meetings, Diagnostic Slide Session, and Presidential Symposium) will be held in the **Live Oak and Magnolia Ballrooms** of the hotel on the second floor.

All poster sessions will be held in the **Willow Ballroom** on the second floor.

PRE-REGISTRATION PICK-UP

Attendees pre-registered and pre-paid for the Special Course and/or Meeting will have their name badge, course syllabus, program booklets, and June 2013 issue of JNEN with abstracts, reception ticket, and registration receipt ready for pick-up at the AANP Registration Desk, located in the foyer area outside of the ballrooms/conference lounge on the second floor. On-site registration and additional tickets for the Annual Reception will be available at the Desk.

REGISTRATION DESK

Location	**Conference Lounge Foyer**	
Time	Wednesday, June 19	6:30 pm – 9:00 pm
Time	Thursday, June 20	6:30 am - 12 noon 6:30 pm – 9:00 pm
	Friday, June 21	7:00 am - 12 noon 5:30 pm – 6:00 pm
	Saturday, June 22	7:00 am - 12 noon

PLEASE, wear your name badge!

Your name badge is *required for admittance* to any function of the Association, including the Special Course, all Friday, Saturday and Sunday sessions, and the Friday evening reception.

NOTES to PRESENTERS

Platform Presenters (PowerPoint)

Please include in your presentation a conflict of interest slide.

All platform presentations will be held in either the **Live Oak or Magnolia Ballrooms** of the hotel. *All* general sessions (Special Lectures, Korey Lecture, DeArmond Lecture, Parisi Lecture, Business Meetings, Diagnostic Slide Session, and Presidential Symposium) will be held in the **Live Oak Ballroom**.

Presenters should use PowerPoint for their presentation.
All PowerPoint presentations will be transferred onto a show computer prior to the start time of each session. Each room will be equipped with a lectern, audience microphones, central computer (loaded with MS Office XP), LCD/Data projector, screens and a laser pointer.

Special Notes for PowerPoint presenters:

- Each speaker must bring his/her PowerPoint presentation on a USB memory stick.
- Please title the presentation with your name (name.ppt).
- Macintosh users, be sure to save your presentation as .ppt (*your name.ppt)*. If the ".ppt" extension is not present in the file name, the file will not be recognized by the PC computer.
- Your presentation will be transferred onto the show computer for each session by the technician. Please make sure your presentation is in its final form, since once loaded onto the show computer, no changes can be made.
- Please take your memory stick to the room in which you will be presenting, Live Oak or Magnolia Ballrooms, at one of the times indicated below. ***It is your responsibility to get your file to the AV staff prior to your presentation.***
- The AV staff will be available to load your file onto the computer during scheduled evening and morning times, or during session breaks. **These will be the *only* times available to you to load and test your presentation.**

Schedule for Loading PowerPoint Presentations

Load show computer in *Adams or Monroe Ballroom*	
Thursday, June 20	7:00 am - 7:45 am 10:30 am – 11:00 am 3:00 pm – 3:30 pm
Friday, June 21	7:00 am - 7:45 am 10:00 am – 10:30 am 4:00 pm – 4:30 pm
Saturday, June 22	7:00 am – 7:45 am 10:00 am – 10:30 am 4:00 pm – 4:30 pm
Sunday, June 23	7:00 am - 7:45 am

- **If you are presenting in a morning session, it is preferable to check in the previous day**. Same-day presentations may be loaded in the morning prior to session start time, but since this time necessarily is limited, you are encouraged to have your presentation loaded on the evening preceding your talk. Presenters at the evening Diagnostic Slide Session also will be able to submit their files on Saturday evening in the Live Oak Ballroom from 6:30-7:45 pm.
- To avoid time delays and potential problems with your presentation, you will ***not*** be allowed to use your own computer, although you may bring your laptop as a backup.

Notes to Poster Presenters

Both poster sessions will be held in **Willow Ballroom** on the second floor**.** Approximately half the posters will be displayed all day Friday and the remainder all day Saturday. Posters should be up by 8:00 am on the morning of your presentation and taken down by 8:30 pm the same day. The poster board size is 8 ft wide x 4 ft high. Please plan your poster to be at least a few inches smaller in each direction. The poster board surface and construction should accommodate either Velcro or push pins. Push pins will be provided

To encourage interaction with interested attendees, authors must be present at their posters for discussion/questions during morning or afternoon refreshment breaks, at the following designated times:

	Fri June 21 ***Authors Present at:***	**Sat June 22** ***Authors Present at:***
***EVEN* Numbered Poster**	*10:00 - 10:30 am*	*4:00 – 4:30 pm*
***ODD* Numbered Poster**	*4:00 – 4:30 pm*	*10:00 - 10:30 am*

MICROSCOPE VIEWING ROOM

Multi-headed microscopes will be available in the ***Beauregard Room*** on the second floor of the hotel.

Location	**Beauregard Room**	
Time	Thursday, June 20	7:00 am - 5:30 pm
	Friday, June 21	7:00 am - 5:30 pm
	Saturday June 22	7:00 am - 5:30 pm

BUSINESS MEETING

Location	**Live Oak Ballroom**	
Time	Friday, June 21	11:45 am - 12:45 pm
	Saturday June 22	11:45 am – 12:45 pm

The awards for ***Meritorious Contributions to Neuropathology*** will be presented on Friday June 21, 2013

SPECIAL MEETINGS BY INVITATION ONLY

Date	**Meeting**	**Time/Location**
Wednesday June 19	Education Committee Meeting	6:30 pm Hampton Room, Second Floor
Thurs June 20	Awards Committee Meeting	5:30 pm Ashley Cooper Room, Second Floor
	Executive Council Meeting	6:00 pm 2L Suite, Second Floor
Fri June 21	Trainee Luncheon	11:45 pm – 2:00 pm Cypress Ballroom, Second Floor
	Awards Committee Meeting	5:30 pm – 6:30 pm Ashley Cooper Room, Second Floor
Saturday June 22	JNEN Editorial Board Meeting	7:00 am – 8:00 am Cypress Ballroom, Second Floor
	NP Program Directors Meeting	1:00 pm – 2:00 pm Ashley Cooper Room, Second Floor
	Awards Committee Meeting	6:00 pm 7:30 pm Ashley Cooper Room, Second Floor
	Professional Affairs	6:00 pm – 8:00 pm The Hampton Room, Second Floor
	Presidential Reception	Cypress Ballroom, Second Floor 6:30 pm – 8:00 pm
Sun June 23	Founders Breakfast	7:00 am – 8:00 am Hampton Room, Second Floor

ABSTRACTS

Abstracts of the papers presented in the program are published in the June 2013 issue of the *Journal of Neuropathology and Experimental Neurology*.

ANNUAL RECEPTION

The annual reception will be held 6:30 to 8:30 pm, Friday in the Riviera Ballroom/Theater. Registrants and guests of the AANP are welcome to attend. There will be a cash bar. Additional tickets are $20 each for guests of AANP attendees, and may be purchased at the time of registration or at the door. Several "prizes" will be awarded to trainees.

Location	**Riviera Ballroom/Theater**	
Time	Friday, June 21	6:30 pm – 8:30 pm

SPONSORS and DONORS

This meeting is sponsored in part by generous contributions from several sponsors and donors. Please visit their displays and exhibits in the Willow Ballroom.

Location	**Willow Ballroom**	
Time	Thursday, June 20	12:00 pm – 5:30 pm
	Friday, June 21	7:00 am - 5:30 pm
	Saturday June 22	7:00 am - 5:30 pm

MEETING EXHIBITORS

- Nikon
- Wolters Kluwer Health

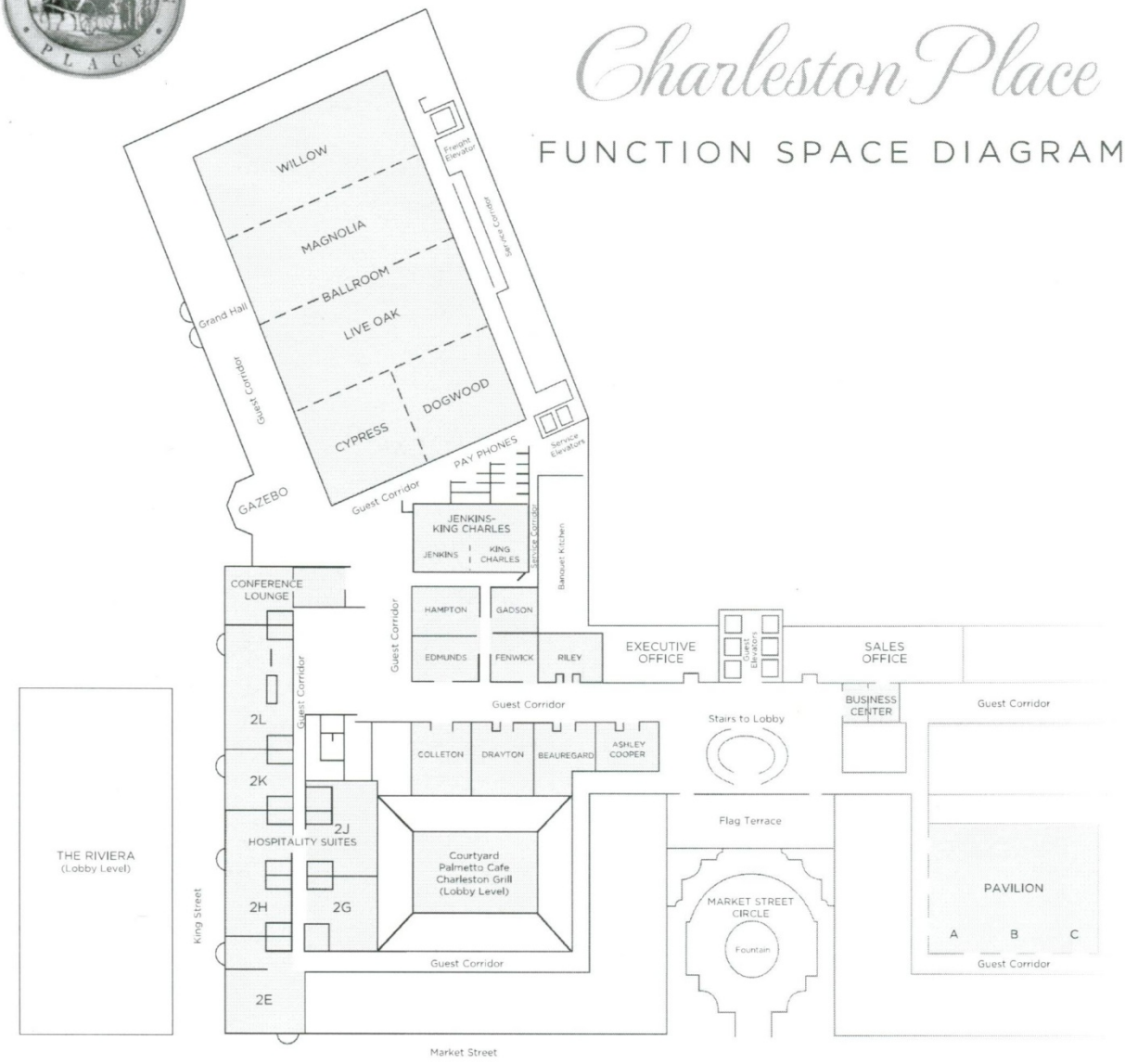
RECEPTION PRIZE CONTRIBUTORS

- Wolters Kluwer Health
- Elsevier Inc.
- Southwest Medical Books

by ORIENT-EXPRESS

Charleston Place

FUNCTION SPACE DIAGRAM



PROGRAM and SCIENTIFIC SESSIONS

SPECIAL COURSE:

Location	Live Oak Magnolia Ballroom	
Date/Time	Thursday, June 20	8:00 am - 5:00 pm
	Morning: Practical Issues and Challenging Diagnoses in Forensic Neuropathology *Afternoon: Update in Frontotemporal Lobar Degenerations* Directors: Charles L. White, III, MD and Elizabeth J. Cochran, MD	

PLATFORM PRESENTATIONS

Location	Live Oak Ballroom and Magnolia Ballroom	
Date/Time	Friday, June 21	8:00 am – 4:00 pm
	Saturday, June 22	8:00 am – 4:00 pm

POSTER PRESENTATIONS (Not Offered for CME Credit)

Location	Willow Ballroom	
Date/Time	Friday, June 21	8:00 am – 6:30 pm
	Saturday, June 22	8:00 am – 6:30 pm

PARISI LECTURE

Location	Live Oak Magnolia Ballroom	
Date/Time	Friday, June 21	10:30 am - 11:30 am
	GFAP: Friend or Foe Albee Messing, VMD, PhD *University of Wisconsin, Madison, WI*	

DEARMOND LECTURE

Location	Live Oak Magnolia Ballroom	
Date/Time	Friday, June 21	4:30 pm – 5:30 pm
	A Unifying Role for Prions in Neurodegenerative Diseases Stanley Prusiner, MD *University of California San Francisco, San Francisco, CA*	

SAUL R. KOREY LECTURE

Location	Live Oak Magnolia Ballroom	
Date/Time	Saturday, June 22	10:30 am - 11:30 am
	Gain And Pain From Cerebral Microvessels—Adventures in Vascular Neuropathology Harry Vinters, MD *Ronald Reagan UCLA Medical Center and the David Geffen School of Medicine at UCLA, Los Angeles, CA*	

DIAGNOSTIC SLIDE SESSION

Location	Live Oak Magnolia Ballroom	
Date/Time	Saturday, June 22	8:00 pm -11:00 pm

PRESIDENTIAL SYMPOSIUM

Location	Live Oak Magnolia Ballroom	
Date/Time	Sunday, June 23	8:00 am – 12 noon
	Seeing Differently: Digital and Quantitative Neuropathology	

MEETING AT A GLANCE

THURSDAY June 20, 2013	
	Live Oak Magnolia Ballroom
8:00 am - 5:00 pm	*SPECIAL COURSE* *Morning: Practical Issues and Challenging Diagnoses in Forensic Neuropathology* *Afternoon: Update in Frontotemporal Lobar Degenerations*

(Abstract Numbers in Italics)

FRIDAY June 21, 2013			
	Live Oak Ballroom	Magnolia Ballroom	Willow Ballroom
8:00 - 10:00 am	Platform 1 Tumors- 1 *#1 - 8*	Platform 2 Neurodegenerative – Alzheimer's Disease *#9 - 16*	All Posters (Not Offered for CME credit) Friday June 21nd and Saturday June 22rd 10:00 – 10:30 am 4:00 - 4:30 pm
10:00 - 10:30 am	*REFRESHMENT BREAK*		
10:30 - 11:30 am	*PARISI LECTURE* *Live Oak Magnolia Ballroom* *GFAP: Friend or Foe* Albee Messing, VMD, PhD *University of Wisconsin, Madison, WI*		
11:45 - 12:45 pm	*BUSINESS MEETING I* *Magnolia Ballroom*		
12:45 - 2:00 pm	*LUNCH*		
	Live Oak Ballroom	Magnolia Ballroom	
2:00 - 4:00 pm	Platform 3 Muscle/Other *#17-24*	Platform 4 Neurodegenerative: FTD/Lewy Body/Parkinson and Other *#25 -32*	
4:00 – 4:30 pm	*REFRESHMENT BREAK*		
4:30 – 5:30 pm	*DEARMOND LECTURE* *Live Oak Magnolia Ballroom* *A Unifying Role for Prions in Neurodegenerative Diseases* Stanley Prusiner, MD *University of California San Francisco, San Francisco, CA*		

6:30 - 8:30 pm *ANNUAL RECEPTION:*
Riviera Ballroom/Theater

MEETING AT A GLANCE

(Abstract Numbers in Italics)

<table>
<tr><th colspan="4">SATURDAY June 22, 2013</th></tr>
<tr><td></td><td>Live Oak Ballroom</td><td>Magnolia Ballroom</td><td>Willow Ballroom</td></tr>
<tr><td>8:00 - 10:00 am</td><td>Platform 5
Developmental and Pediatric Neuropathology
#97 - 104</td><td>Platform 6
Neurodegenerative Other/Infectious
#105-112</td><td rowspan="11">All Posters
(Not Offered for CME Credit)

Friday June 22th and Saturday June 23th
10:00 – 10:30 am
4:00 - 4:30 pm</td></tr>
<tr><td>10:00 - 10:30 am</td><td colspan="2">REFRESHMENT BREAK</td></tr>
<tr><td>10:30 - 11:30 am</td><td colspan="2">SAUL KOREY LECTURE
Live Oak Magnolia Ballroom

Gain And Pain From Cerebral Microvessels—Adventures in Vascular Neuropathology

Harry Vinters, MD
Ronald Reagan-UCLA Medical Center and the David Geffen School of Medicine at UCLA, Los Angeles, CA</td></tr>
<tr><td>11:45 - 12:45 pm</td><td colspan="2">BUSINESS MEETING II
Magnolia Ballroom</td></tr>
<tr><td>12:45 - 2:00pm</td><td colspan="2">LUNCH</td></tr>
<tr><td></td><td>Live Oak Ballroom</td><td>Magnolia Ballroom</td></tr>
<tr><td>2:00 - 4:00 pm</td><td>Platform 7
Tumors 2
#113-120</td><td>Platform 8
Vascular/Stroke/Other
#121-128</td></tr>
<tr><td>4:00 - 4:30 pm</td><td colspan="2">REFRESHMENT BREAK</td></tr>
<tr><td>4:30 - 5:00 pm</td><td colspan="2">What Every Neuropathologists Needs to Know: A Practical Approach to Medulloblastoma Classification

Charles Eberhart, MD, PhD
Johns Hopkins, Baltimore, MD</td></tr>
<tr><td>5:00 - 5:30 pm</td><td colspan="2">What Every Neuropathologists Needs to Know: New Guidelines and Controversies for the Classification of Cortical Dysplasia

Jeffrey Golden, MD
Children's Hospital of Philadelphia, Philadelphia, PA</td></tr>
<tr><td>8:00 - 11:00 pm</td><td colspan="2">DIAGNOSTIC SLIDE SESSION
Live Oak Magnolia Ballroom</td></tr>
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SUNDAY June 23, 2013	
	Live Oak Magnolia Ballroom
8:00 am - 12:00 pm	*PRESIDENTIAL SYMPOSIUM* *Seeing Differently: Digital and Quantitative Neuropathology*

THURSDAY, June 20, 2013

SPECIAL COURSE

Morning: Practical Issues and Challenging Diagnoses in Forensic Neuropathology
Afternoon: Update in Frontotemporal Lobar Degenerations

Directors: Charles L. White, III, MD and Elizabeth J. Cochran, MD

Live Oak Magnolia Ballroom

8:00 am	Welcome and CME Pre-test *Charles L. White, III, MD* *University of Texas Southwestern Medical Center, Dallas, TX*
8:15 am – 9:00 am	The Neurometabolic Cascade of Traumatic Brain Injury *David Hovda, PhD* *University of California Los Angeles, Los Angeles, CA*
9:00 am – 9:45 am	Biomechanics of Pediatric Traumatic Brain Injury *Susan S. Margulies, PhD* *University of Pennsylvania, Philadelphia, PA*
9:45 am – 10:30 am	Common and Contested Neuropathology of Pediatric Traumatic Brain Injury *R. Ross Reichard, MD* *Mayo Clinic, Rochester, MN*
10:30 am – 11:00 am	*REFRESHMENT BREAK*
11:00 am – 11:45 am	Traumatic Spine and Spinal Cord Injury *David Dolinak, MD* *Travis County Medical Examiner, Austin, TX*
11:45 am – 12:30 pm	Legal Issues Related to Postmortem Neuropathological Examinations *Leslie C. Kamelhar, JD* *Office of Cheif Medical Examiner, New York, NY*
12:30 pm - 1:30 pm	*LUNCH*
1:30 pm – 2:15 pm	Making the Diagnosis of Frontotemporal Lobar Degeneration *Eileen H. Bigio, MD* *Northwestern University Feinberg School of Medicine, Chicago, IL*
2:15 pm – 3:00 pm	Network-Based Neurodegeneration: Evidence from Human Neuroimaging *Bill Seeley, MD* *University of California San Francisco, San Francisco, CA*
3:00 pm - 3:30 pm	*REFRESHMENT BREAK*
3:30 pm – 4:15 pm	The Genetics of Frontotemporal Lobar Degeneration *Vivianna Van Deerlin, MD, PhD* *University of Pennsylvania, Philadelphia, PA*
4:15 pm – 5:00 pm	Molecular Mechanisms of Frontotemporal Lobar Degeneration *Eddie Lee, MD, PhD* *University of Pennsylvania, Philadelphia, PA*

FRIDAY, JUNE 21, 2013

TRAINEE LUNCHEON AND JOB FAIR
(Not Offered for CME Credit)

11:45 pm – 2:00 pm – Cypress Ballroom

Matthew Frosch, MD
Michael Lawlor, MD, PhD
Steven Dubner, MD
Elizabeth Cochran, MD

SATURDAY, JUNE 22, 2013

SPECIAL LECTURES

Live Oak Ballroom

4:30 pm – 5:00 pm	What Every Neuropathologist Needs to Know: A Practical Approach to Medulloblastoma Classification Charles Eberhart, MD, PhD *Johns Hopkins, Baltimore, MD*
5:00 pm – 5:30 pm	What Every Neuropathologist Needs to Know: New Guidelines and Controversies for the Classification of Cortical Dysplasia Jeffrey Golden, MD *Brigham Women's Hospital, Boston, MA*

SUNDAY, JUNE 23, 2013

PRESIDENTIAL SYMPOSIUM

Seeing Differently: Digital and Quantitative Neuropathology

Magnolia Ballroom

8:00 am – 8:05 am	Introduction and CME Pre-test *Charles L. White, III, MD* *University of Texas Southwestern Medical Center, Dallas, TX*
8:05 am - 9:00 am	Digital and Quantitative Neuropathology: History and Opportunities *Charles L. White, III, MD* *University of Texas Southwestern Medical Center, Dallas, TX*
9:00 – 9:45 am	Current State of Whole Slide Imaging, Telepathology, and Light Microscopic Image Analysis *Liron Pantanowitz, MD* *University of Pittsburgh Medical Center, Pittsburg, PA*
9:45 am – 10:30 am	*AANP AWARD PRESENTATIONS AND REFRESHMENT BREAK*
10:30 am – 11:15 am	Applications Of Unbiased Stereology To Brain Pathology *Peter R. Mouton, PhD* *University of South Florida, Tampa, FL*
11:15 am – 12:00 pm	***Matthew T. Moore Lecture:*** How does Alzheimer Disease Know Neuroanatomy? *Bradley Hyman, MD, PhD* *Massachusetts General Hospital, Boston, MA*
12:00 pm	*INSTALLATION OF NEW OFFICERS AND ADJOURNMENT*

		Platform 1: Tumors Glial Live Oak Ballroom Chairs: *Arie Perry & Fausto Rodriguez*		**Platform 2: Neurodegenerative – Alzheimer Disease and Other** Magnolia Ballroom Chairs: *Elizabeth Cochran & Peter Nelson*
8:00- 8:15	1	**ATRX Abnormalities are Class-Defining Molecular Determinants in Lower-Grade Diffuse Gliomas** *Jason T. Huse, MD, PhD*	9	Withdrawn
8:15- 8:30	2	**Effects of D-2-hydroxyglutarate on Proliferation, Apoptosis, Autophagy, and Oxidative Stress in Gliomas** *Craig Horbinski, MD, PhD*	10	**Quantitative Stereologic Analysis of Cerebral Amyloid Angiopathy Across the Cognitive Continuum** *Gregory Jicha, MD, PhD*
8:30- 8:45	3	**Genomic Characterization of Diffuse Astrocytoma by SNP-CN Arrays and Hot-Spot Mutation Sequencing** *Chunhai Hao, MD, PhD*	11	**Pathological and Clinical Phenotypes Associated with Different Genotypes of Alzheimer's Disease Associated Genes** *Julia Kofler, MD*
8:45- 9:00	4	**Epigenetic Determinants of Cellular State in Glioblastoma** *Mario L. Suvà, MD, PhD*	12	**Quantitative Label-free Proteomics for Discovery of Biomarkers in CSF: Assessment of Technical and Inter-individual Variation** *Richard J. Perrin, MD, PhD*
9:00- 9:15	5	**Aberrant Expression of Interleukin-1 by Malignant Gliomas: Implications for Glioma Progression and Therapy** *Sunhee C. Lee, MD*	13	**Pathogenic Linkage between Prion and Alzheimer's Disease** *Stephen DeArmond, MD, PhD*
9:15- 9:30	6	**Prolonged Inhibition of Glioblastoma Xenograft Initiation and Clonogenic Growth Following *in vivo* Notch Blockade** *Charles Eberhart, MD, PhD*	14	**Lingo-1 Expression is Increased in Essential Tremor Cerebellum and is Present in the Basket Cell Pinceau** *Phyllis L. Faust, MD, PhD*
9:30- 9:45	7	**Validation of a Next Generation Sequencing Gene Panel for Gliomas in Clinical Practice** *Maria Martinez-Lage, MD*	15	**Amyloid Properties of Inclusions in ALS and FTLD-TDP but not FTLD-FUS** *Eileen H. Bigio, MD*
9:45- 10:00	8	**Frequent ATRX, CIC, FUBP1 and IDH1 Mutations Refine the Classification of Malignant Gliomas** *Patrick J. Killela, BS*	16	**Postmortem Neostriatal Neuropathology in Early Huntington Disease** *John C. Hedreen, MD*

10:00 - 10:30 am ***REFRESHMENT BREAK***

10:30 – 11:30 am ***Parisi Lecture***
GFAP: Friend or Foe
Albee Messing, VMD, PhD
University of Wisconsin, Madison, WI

11:45 am – 12:45 pm ***Business Meeting I*** *(Live Oak Ballroom)*

12:45 – 2:00 pm ***Lunch***

Friday, June 21, 2013

		Platform 3: Muscle/Other Live Oak Ballroom *Chairs:* *Marta Margeta & Steven A. Moore*		**Platform 4: Neurodegenerative – FTD/Lewy Body/ Parkinson and Other** Magnolia Ballroom *Chairs:* *Dennis Dickson & Edward Lee*
2:00- 2:15	17	**Integration of Common Data Elements into Muscle Biopsy Reports** *Michael W. Lawlor, MD, PhD*	25	**The Parkinson Progression Marker Initiative (PPMI)** *John Q. Trojanowski, MD, PhD*
2:15-2:30	18	**Polymyositis and Inclusion Body Myositis in HIV-Positive Individuals: A Study of 19 Cases** *Annie Hiniker, MD, PhD*	26	**Transmission of Alpha-Synuclein in Parkinson's Disease** *Virginia M.-Y. Lee, PhD*
2:30- 2:45	19	**Siblings with a Novel CHKB Mutation are Identified among Clinically Diverse Patients with Megaconial Myopathy** *Steven A. Moore, MD, PhD*	27	**Concomitant Pathologies Among a Spectrum of Parkinsonian Disorders** *Brittany N. Dugger, PhD*
2:45- 3:00	20	**Caspases Mediate Apoptosis-Like Degenerative Changes at the Neuromuscular Junction in Slow Channel Myasthenic Syndrome** *Peter Pytel, MD*	28	**Neuropathology of Repeat-Associated Non-ATG Translation in c9FTD/ALS** *Kevin F. Bieniek*
3:00- 3:15	21	**Improved Strategy for Diagnosis of Electron Transport Chain Deficiency in Children with Suspected Mitochondrial Myopathy** *Michael V. Miles, PharmD*	29	**Neuroinflammation Modulates Expression of Progranulin Receptor Sortilin in FTLD-TDP Brain** *Mingqiang Xie, PhD*
3:15- 3:30	22	**Gene Replacement Therapy Improves Muscle Function and Pathology in Murine and Canine Models of X-Linked Myotubular Myopathy** *Michael W. Lawlor, MD, PhD*	30	**Late-Onset Basophilic Inclusion Body Disease: A Unique Clinicopathologic Entity?** *Edward B. Lee, MD, PhD*
3:30- 3:45	23	**Role of the Tiol Mitochondrial System During the Induction of Neuronal Damage in a Rat Model of Perinatal Asphyxia** *Maria Laura Aon Bertolino, MD*	31	**Neuropathological Outcome of Prospectively Followed Normal Elderly Brain Bank Volunteers** *Brittany N. Dugger, PhD*
3:45- 4:00	24	**Egr3 is a Regulator of Muscle Spindle Stretch Receptor Morphogenesis and Innervation Homeostasis** *Warren G. Tourtellotte, MD, PhD*	32	**Hippocampal Sclerosis in Dementia, Epilepsy, and Ischemic Injury: Differential Vulnerability of Hippocampal Subfields** *Kimmo J. Hatanpaa, MD, PhD*

4:00 - 4:30 pm ***REFRESHMENT BREAK***

4:30 – 5:30 pm ***DeArmond Lecture***
A Unifying Role for Prions in Neurodegenerative Diseases
Stanley Prusiner, MD
University of California San Francisco, San Francisco, CA

6:30 – 8:30 pm ***Annual Reception***
Riviera Ballroom/Theater

Poster Session I:
(Not Offered for CME Credit)

33	**Progressive Multifocal Leukoencephalopathy (PML) as the Initial Presentation of HIV/AIDS** Christina Appin and Daniel Brat
34	**Intravascular Papillary Endothelial Hyperplasia/Masson's Change status Post Surgery for Rasmussen's Encephalitis** Mansoor Nasim, Chrystalle Carreon, Jian Li, Steven Schneider, Mark Mittler
35	**Immunoglobulin G4 Related CNS Disease: Clinicopathologic Correlation and Review of the Literature** Jeffery Switzer, Shyamal Mehta, Walter Moore, Paul Biddinger, Amyn Rojiani
36	**Human Metapenuovirus Infection with Fibrin Thrombi Associated Hemorrhagic Encephalopathy in a Four Month Old Infant** Mansoor Nasim, Chrystalle Carreon, Jian Li, Alex Williamson
37	**HyperCKemia and Skeletal Muscle Pathology in Neuromyelitis Optica** Yong Guo, Roumen Balabanov, Margherita Milone, Sean Pittock, Vanda Lennon, Joseph Parisi, Claudia Lucchinetti
38	**Cerebellar Hemorrhage in Premature Infants is Associated with Injury to the Inferior Olivary and Cerebellar Dentate Nuclei** Krista Haines, Wei Wang, Christopher Pierson
39	**Lower Motor Neuron Degeneration with Novel Neuronal Cytoplasmic Inclusions in Boy with Xq22.3 Duplication** Gabrielle Yeaney, Denia Ramirez, Karen Bentley, Margaret Compton, James Powers
40	**Sacrococcygeal Teratoma Associated with Pseudotail: A Unique Presentation of Spinal Dysraphism** Jennifer Baccon and Mark Dias
41	**p75NTR Regulates The Maintenance of Sympathetic Neural Stem Cells** Bret Mobley and Bruce Carter
42	**Fetal Akinesia Deformation Sequence with Pontocerebellar Hypoplasia and Gyration Defects of the Neocortex and Cerebellum** Meghan Kapp, Pamela Lyle, Hannah Kinney, Hilary Nickols
43	**Primary Intracranial Pleomorphic Sarcoma in a Child with Osteogenesis Imperfecta** Catherine Smith, Pasisit Paueksakon, Ty Abel, James Atkinson, Matthew Pearson
44	**Developmental Reorganization of Axons that Innervate a Parasympathetic End-Organ** Shu-Hsien Sheu, Juan Carlos Tapia, Jeff Lichtman
45	**Neuroglial Heterotopia (NH) Presenting as a Neck Mass** Murat Gokden, Charles Glasier, Gresham Richter
46	**Congenital Intracranial Lipoma with Chondroid Component: Clinical Imaging and Histological Findings** Meghan Kessler, Michael Wilkinson, Mark Dias, Arabinda Choudhary, Charles Specht
47	**Pick Disease Associated with a ΔK280 *MAPT* Gene Mutation** Kathy Newell, Jill Murrell, Cynthia Gouvion, Rose Richardson, Bernardino Ghetti
48	**A Novel GRN Mutation: Clinicopathologic Report of Four Cases** Esther Bit-Ivan, Sandra Weintraub, Bradley Hyman, Steven Arnold, Elisabeth McCarty-Wood, HyungSub Shim, Eunran Suh, Vivianna Van Deerlin, Julie Schneider, John Trojanowski, Matthew Frosch, Matt Baker, Rosa Rademakers, M. Marsel Mesulam, Eileen Bigio
49	**Evaluation of Astroglial Involvement in Lewy Body Disease** David Nauen
50	**Autopsy-Based Feasibility Study of Submandibular Gland Biopsy for the Diagnosis of Dementia with Lewy Bodies** Thomas Beach, Haru Akiyama, Marwan Sabbagh, Charles Adler, Holly Shill, Lucia Sue, Geidy Serrano, Brittany Dugger, Sandra Jacobson, Kathryn Davis
51	**Tauopathy with Globular Glial Inclusions in a 78 Year-Old Man with 11 Years of Slowly Progressive Neurological Disease** Kathy Newell, Bernardino Ghetti, Jill Murrell, Jeffrey Burns, Dennis Dickson

Poster Session I Continued:
(Not Offered for CME Credit)

52	**Relationship between Cerebral Cortical Lesion Progression and Clinical Findings in MM1-Type Sporadic CJD** Yasushi Iwasaki, Shinsui Tatsumi, Maya Mimuro, Mari Yoshida
53	**Friedreich's Ataxia: Iron and Zinc Redistribution in Dorsal Root Ganglia** Arnulf Koeppen, R. Ramirez, Sarah Bjork, Joseph Mazurkiewicz, Erik Kuntzsch
54	**Amyloid PET Images and Neuropathology in Gerstmann-Sträussler-Scheinker Disease Associated with the PRNP P102L-129M Mutation** Masaki Takao, Kenji Ishii, Ban Mihara, Hiroaki Kimura, Kiichi Ishiwata, Tetsuyuki Kitamoto, Youji Yoshida
55	**Ultrastructural Analysis of Capillary Basal Lamina Components in Amyotrophic Lateral Sclerosis** Wen-Lang Lin and Dennis Dickson
56	**Neuropathology of Hereditary Endotheliopathy with Retinopathy, Nephropathy, and Stroke (Herns)** Negar Khanlou, Arthur Cohen, Jennifer Clebanoff, Kritsanapol Boon-Unge, Jennifer Yi, Jeffrey Petersen, Ben Glasgow, Keng Chih Su, William Yong, Joanna Jen, Harry Vinters
57	**Argyrophilic Grains are Constant and Disease Specific Features in Corticobasal Degeneration** Shinsui Tatsumi, Maya Mimuro, Yasushi Iwasaki, Akiyoshi Kakita, Hitoshi Takahashi, Mari Yoshida
58	**Mutations in the BRI2 Gene Cause Intracellular Accumulation of Immature BRI2 Protein** Holly Garringer, Neeraja Sammeta, Bernardino Ghetti, Ruben Vidal
59	**Novel Insights on the Pathogenesis of Wernicke-Korsakoff Syndrome** Keyla Kleyser-Sugrue and Suzanne De la Monte
60	**A Case of Creutzfeldt-Jakob Disease Associated with the P105S-129V Mutation in *PRNP* Gene** Jose Bonnin, Laura Cracco, Jill Murrell, Rose Richardson, Bradley Glazier, Daniel Bonnin, Pierluigi Gambetti, Bernardino Ghetti
61	**Variably Protease-Sensitive Prionopathy: A Diagnostic Challenge** Jose Bonnin, Jill Murrell, Joanne Norton, Wenquan Zou, Silvio Notari, Pierluigi Gambetti, Bernardino Ghetti
62	**Clinical and Pathologic Analysis of X-Linked ALS with UBQLN2 Mutation** Esther Bit-Ivan, Han-Xiang Deng, Qinwen Mao, Nailah Siddique, Teepu Siddque, Eileen Bigio
63	**Neuropathological Findings in Optic Relay Pathways in Glaucoma** Marco Hefti and Rolf Pfannl
64	**Ocular Leukemic Infiltrate with Anterior Segment Ischemia: Case Report and Literature Review** Grace Weyant, Michael Wilkinson, Jozef Malysz, Charles Specht
65	**Giant-Cell Arteritis Presenting with Uveitis** Stephanie Slemp, Sarah Martin, Richard Burgett, Eyas Hattab
66	**No Expression of Proteins Associated with Alzheimer's Disease and Parkinson's Disease in Retina and Lens** Cheng-Ying Ho
67	**Comparative Neuropathologic Study of Hippocampal Sclerosis in Mesial Temporal Lobe Epilepsy and Senile Dementia** Hajime Miyata, Taeko Kaneko, Spencer Tung, Harry Vinters
68	**Neuropathology of DYT-1 Primary Torsion Dystonia** Shervin Rahimpour, Aysesule Tinaz, Nancy Edwards, Abhik Ray-Chaudhury, Mark Hallet
69	**Postmortem Findings in a Rare Case of Occuloleptomeningeal Amyloidosis With Val30Gly Mutation** Sarah Martin, Merrill Benson, Eyas Hattab
70	**Diagnostic Application of High Resolution SNP Arrays for Children with Brain Tumors** Mariarita Santi, Jacquelyn Roth, Lucy Rorke-Adams, Brian Harding, Laura Tooke, Maria Martinez-Lage, Jaclyn Biegel

Poster Session I Continued:
(Not Offered for CME Credit)

71	**The Presence of Neural Stem Cells or Neuronal Marker Expressing Cells is not Prognostically Significant in Glioblastomas** Min-Cheol Lee, Kyung-Hwa Lee, Kyung-Sub Moon, Hyung-Seok Kim, Shin Jung
72	**Gliosarcoma Arising From the Pineal Gland: Report of Two Cases** Yasuo Sugita, Koichi Ohshima, Mizuhiko Terasaki, Motohiro Morioka, Koichi Higaki, Setsuko Nakagawa, Shoko Shimokawa, Susumu Nakashima
73	**Lack of Isocitrate Dehydrogenase 1-R132H Mutation in Anaplastic Pilocytic Astrocytoma** Fahad Bafakih, Darnell Josiah, Kymberly Gyure
74	**Histological Classification And Grading of WHO Grade II-III Astrocytomas and Oligoastrocytomas: A Futile Exercise?** Vamsidhara Vemireddy, Jack Raisanen, Dwight Oliver, Chan Foong, Tianshen Hu, Dennis Burns, Charles White, Samuel Barnett, Bruce Mickey, Martha Stegner, Amyn Habib, Karen Fink, Elizabeth Maher, Robert Bachoo, Kimmo Hatanpaa
75	**Intraventricular Papillary Glioneuronal Tumor. A Case Report** Monika Wrzolek, Jianying Zeng, John Shiau, Jamie Juliano, Lynne Voutsinas
76	**Glioblastoma and Neurodegenerative Disease – A Retrospective Autopsy Review** Stephen Coons, Jiong Shi
77	**Textiloma (Gossypiboma) Mimicking an Intracranial Aneurysm** Mulligan Linda, Elizabeth Ryan, Seamus Looby, John Caird, Francesca Brett
78	**Conditional Reprogramming and Immortalization of Rat Primary Astrocytes** Saed Sadeghi, Galam Khan, Cecilia Webb, Brent Harris
79	**Skeletal Metastases from a High Grade Glioma: A Case Report** Esther Bit-Ivan, James Chandler, Jeffrey Raizer, Eileen Bigio, Qinwen Mao
80	**Rhabdoid Glioblastoma in a Young Adult** Ibrahim Aburiziq, Timothy Kovanda, Aaron Cohen-Gadol, Mary Edwards-Brown, Jose Bonnin
81	**Eosinophils in Pilocytic Astrocytomas** Omid Rashidipour, Beverly Wilson, Jeffrey Pugh, Vivek Mehta, Jian-Qiang Lu,
82	**Immunohistochemical Analysis of BRAF V600E Mutation in Pleomorphic Xanthoastrocytoma is an Accurate Detection Method** Cristiane Ida, Julie Vrana, Fausto Rodriguez, Mark Jentoft, Alissa Caron, Sarah Jenkins, Caterina Giannini
83	**Glioblastoma with a Focal Ependymal Growth Pattern: a Potential Diagnostic Pitfall** Zhe Piao and Vaninder Chhabra
84	**Gliosarcoma with PNET-Like and Liposarcomatous Components** Kliment Donev and Mohanpal Dulai
85	**Proteoglycans and their Potential Roles in the Brain Tumor Microenvironment** Joanna Phillips, Aaron Robinson, Jane Engler, Claudia Petritsch, C. David James, Anna
86	**High Expression of Nestin is an Adverse Prognostic Factor in WHO Grade II-III Astrocytomas and Oligoastrocytomas** Tianshen Hu, Chan Foong, Vamsidhara Vemireddy, Jack Raisanen, Dwight Oliver, Dennis Burns, Charles White, L. Whitworth, Bruce Mickey, Martha Stegner, Amyn Habib, Karen Fink, Elizabeth Maher, Robert Bachoo, Kimmo Hatanpaa
87	**Absence of IDH Mutation in Oligodendroglial Tumors with 1p/19q Co-Deletion: Technical Problem or an Alternate Pathway** Jantima Tanboon, Hande Keser, Sakir Gultekin, Tarik Tihan
88	**Increased Trisomy 7 Levels are Associated with High-Grade Molecular Features in Non-EGFR-Amplified Infiltrating Gliomas** Leonidas Arvanitis and Ronald Hamilton
89	**Are 1p19q Co-Deleted Oligodendroglioma's More Likely to Present with Seizures?** Mulligan Linda, Elizabeth Ryan, Seamus Looby, Josephine Heffernan, Joanne O'Sullivan, Mary Clarke, Patrick Buckley, Donncha O'Brien, Michael Farrell, Francesca Brett
90	**Papillary Glioneuronal Tumor with Granular Cells – A Manifestation of Oligodendroglial Differentiation?** Michael Lynch, Cathy Housman, Arabinda Choudhary, Mark Lantosca, Charles Specht

Poster Session I Continued:
(Not Offered for CME Credit)

91	**Strong ZEB1 Immunoreactivity in IDH1-Positive Infiltrating Gliomas: A Possible Link between Tumorigenic Pathways?** Jesse Kresak, Marie Rivera-Zengotita, Kelly Devers, Anthony Yachnis, Florian Siebzehnrubl
92	**Altered Histone 3 Lysine 27 Trimethylation(H3K27me3)& Histone 3 Lysine 9 Trimethylation(H3K9me3) Patterns in Glial Neoplasms** Sama Ahsan, Leomar Ballester, Javad Nazarian, Katherine Warren, Martha Quezado, Charles Eberhart, Fausto Rodriguez
93	**Genetic Grouping of Medulloblastomas by Representative Markers in Pathologic Diagnosis** Hye Sook Min, Ji Yeoun Lee, Seung-Ki Kim, Sung-Hye Park
94	**Hematoxylin and Eosin Assessment of High Grade Glioma Paraffin Block Adequacy for Molecular Analysis** William Yong, Gregory Lucey, Lauren Hanna, Desiree Sanchez, Reema Mody, Albert Lai
95	**Expression of Ketolytic and Glycolytic Enzymes in Malignant Gliomas: Implication for Ketogenic Diet Therapy** Howard Chang, Lawrence Olson, Kenneth Schwartz
96	**Expression of VEGF and Anti-Angiogenic PEDF in NF1 Pilocytic Astrocytomas with Unusual Vascularity and Imaging Findings** Miguel Guzman, Sultan Habeebu, Philip Fitchev, Susan Crawford
97	**Pre- and Post-Bevacizumab Glioblastoma Histopathology, Biomarkers and Imaging: An Autopsy Study** Karra Muller, Nikdokht Farid, Nathan White, Carrie McDonald, Donald Pizzo, Frank Furnari, Anders Dale, Scott VandenBerg
98	**Expression of MAP2 by Hemangioblastomas: Implications for Diagnosis and Histogenesis** Jack Raisanen, Patrick Malafronte, Dennis Burns, Charles White, Kimmo Hatanpaa
99	**Extensively Calcified Low-Grade Astrocytoma-Short Series of a Distinct Entity** Kirti Gupta, Julie Harreld, Noah Sabin, Ibrahim Qaddoumi, Kathreena Kurian, David Ellison
100	**Gliofibroma Arising in a 39 Year-Old Woman with Neurofibromatosis Type 1 and Prior Brain Radiation** Christopher Liverman, Ania Pollack, Sarah Taylor, Kathy Newell
101	**Astroblastoma with Malignant Degeneration Developing Twenty-Six Years after Radiation Therapy for Low-Grade Glioma** John Donahue, Mohammad Mahboob, Jeffrey Rogg, Heinrich Elinzano
102	**A Review of MGMT Testing using Combined Methylation Specific PCR and Immunohistochemistry** William Yong, Shadi Lalezari, Negar Khanlou, Orestes Solis, Desiree Sanchez, Ryan Wilson, Arthur Chou, Anh Tran, Weidong Chen, Reshmi Chowdhury, Sichen Li, Jose Carrillo, Julia Selfridge, Jerry Lou, David Piccioni, Harry Vinters, Paul Mischel, Phioanh Nghiemphu, Richard Green, He-Jing Wang, Linda Liau, Robert Elashoff, Timothy Cloughesy, Albert Lai
103	**Mammaglobin Immunohistochemistry in Primary Central Nervous System Neoplasms and Intracranial Metastatic Breast Carcinoma** Patrick Cimino and Richard Perrin
104	**Mast Cell Sarcoma: Unusual Presentation as a Spontaneous Epidural Hemorrhage - Case Report and Discussion** Viktor Zherebitskiy, Daphne Ang, Guang Fan, Dianna Bardo, Lissa Baird, Sakir Gultekin
105	**Secondary Leptomeningeal Sarcomatosis Associated with a Malignant Peripheral Nerve Sheath Tumor** Christine Bookhout, Thomas Bouldin, Dimitri Trembath, Vincent Moylan
106	**Report of Two Cases of Spinal, Intradural, Extraosseous Ewing's Sarcoma/Peripheral Neuroectodermal Tumor** Mark Curtis, Stacey Mardekian, Markku Miettinen

		Platform 5: Developmental & Pediatric Neuropathology Live Oak Ballroom *Chairs:* *Jeffrey Golden & Anthony Yachnis*		**Platform 6: Neurodegenerative Other/Infectious** Magnolia Ballroom *Chairs:* *Mark Cohen & Julia Kofler*
8:00-8:15	107	**Role of FMRP/mTOR Signaling Cascade in the Pathogenesis of Encephalopathy of Prematurity** *Mirna Lechpammer, MD, PhD*	115	**Retrospective Review of Autopsies with Encephalitis in Manitoba, Canada** *Marc R. Del Bigio, MD, PhD*
8:15-8:30	108	**Neuropathological Hallmarks of CMV-Induced Brain Malformations in Human Fetuses** *Homa Adle-Biassette, MD, PhD*	116	**Bulbo-Spinal Involvement in a Novel Neurological Syndrome Affecting Primates Exposed to Prion Contaminated Blood Products** *Jacqueline Mikol, MD*
8:30- 8:45	109	**Elp1 Function in Neural Crest Cell Migration and Sensory and Sympathetic Target Tissue Innervation in Familial Dysautonomia** *Warren G. Tourtellotte, MD, PhD*	117	**Familial Leukoencephalopathy with Spheroids and a Novel Heterozygous CSF1R Mutation** *Hans H. Goebel, MD*
8:45- 9:00	110	**Human Hippocampal-Caudal Brainstem Connectivity Determined by the Connectome: Implications for Seizure-Related, Sudden Death** *Hannah C. Kinney, MD*	118	**Variably Protease Sensitive Prionopathy in 2013** *Pierluigi Gambetti, MD*
9:00- 9:15	111	**Novel Subplate Expression of LRRN3, an Autism Spectrum Disorder Candidate** *Kathryn A. McFadden, MD*	119	**Case Study of Concurrent Prion Disease and Amyotrophic Lateral Sclerosis** *Ashley Cannon, PhD*
9:15- 9:30	112	**Serotonergic (5-HT) Development in the Human Cerebral Cortex and Hippocampus: A Pilot Study in the Safe Passage Study (SPS)** *Hannah C. Kinney, MD*	120	**Co-occurrence of Distinct Types of Scrapie Prion Protein in Sporadic Creutzfeldt-Jakob Disease** *Ignazio Cali*
9:30- 9:45	113	**Akt-Positive Neurons and Age are Associated with Surgical Outcome in Children with Epilepsy and Focal Cortical Dysplasia** *Lili Miles, MD*	121	**Disassembly Required: Proteomic Identification of Synaptic Caspase Substrates** *James W. Mandell, MD, PhD*
9:45- 10:00	114	**Neuro- and Ophthalmological Pathology Findings Specific To Severe Head Trauma in Young Children: A Comparative Analysis** *Douglas C. Miller, MD, PhD*	122	**New Mechanisms of Phenotypic Determination in Sporadic Creutzfeldt-Jakob Disease and Sporadic Fatal Insomnia** *Laura Cracco, PhD*

10:00 - 10:30 am ***REFRESHMENT BREAK***

10:30 – 11:30 am ***Saul Korey Lecture***
Gain And Pain From Cerebral Microvessels—Adventures in Vascular Neuropathology
Harry Vinters, MD
Ronald Reagan-UCLA Medical Center
David Geffen School of Medicine at UCLA, Los Angeles, CA

11:45 am – 12:45 pm ***Business Meeting II*** *(Live Oak Ballroom)*

12:45 – 2:00 pm ***Lunch***

		Platform 7: Tumors 2 Live Oak Ballroom *Chairs:* *Alexander Judkins & Bette K. DeMasters*		**Platform 8: Vascular/Stroke/Other** Magnolia Ballroom *Chairs:* *David Munoz & Raymond Sobel*
2:00- 2:15	123	**Targeting DNA Damage Response Pathways to Overcome Alkylating Agent Resistance in Pediatric Glioblastoma** *Cynthia Hawkins, MD, PhD*	131	**Metabolite-Imaging Mass Spectrometry to Guide Brain Surgery** *Sandro Santagata, MD, PhD*
2:15-2:30	124	**Novel Genetic Alterations and Potential Therapeutic Targets in Pediatric Low-Grade Gliomas** *David W. Ellison, MD, PhD*	132	**Characterization of Pituitary Adenomas by Mass Spectrometry Based Proteomics** *Mark E. Jentoft, MD*
2:30- 2:45	125	**Evaluation of H3K27me3 and EZH2 in Pediatric Glial and Glioneuronal Tumors Shows Decreased H3K27me3 in H3F3A K27M Mutant GBM** *Sriram Venneti, MD, PhD*	133	**Hydrophilic Polymer Embolism and Associated Vasculopathy of the Brain** *Rupal I Mehta, MD*
2:45- 3:00	126	**Clinicopathologic Features of Pediatric Oligodendrogliomas with Classic Histology** *Fausto J. Rodriguez, MD*	134	**Therapeutic Hypothermia after Cardiac Arrest Results in Selective Sparing of Hippocampal CA1 Neurons: A Post Mortem Analysis** *Kenneth Howard Clark, MD*
3:00- 3:15	127	A Comparative Study of Molecular **Profile in Pediatric versus Adult Oligodendrogliomas** *Chitra Sarkar, MD*	135	**Studying Small Vessel Cerebrovascular Disease with Digital Pathology and Image Analysis** *Peter T. Nelson, MD, PhD*
3:15- 3:30	128	**Identification of Novel Gene Fusions in Malignant Peripheral Nerve Sheath Tumors Using Paired-End Transcriptome Sequencing** *Steven L. Carroll, MD, PhD*	136	**Neuropathologic Substrates of Ischemic-Vascular Dementia: Autopsy Findings from a Longitudinal Study** *Spencer Tung*
3:30- 3:45	129	**Heterogeneity Dictates Therapeutic Response In Nf2-Mutant Schwann Cells** *Christian Davidson, MD*	137	**Neuronal Activity Regulates Nrf2 Antioxidant Pathway in Perisynaptic Astrocytes** *Marta Margeta, MD, PhD*
3:45- 4:00	130	**SUMO1 Modification Stabilizes CDK6 Protein and Drives the Cell Cycle and Glioblastoma Progression** *Chunhai Hao, MD, PhD*	138	**Deregulation of Exosomal and Cellular microRNA in Bipolar Disorder** *Ivana Delalle, MD, PhD*

4:00 - 4:30 pm ***REFRESHMENT BREAK***

4:30 – 5:00 pm ***Special Lectures***

What Every Neuropathologists Needs to Know: A Practical Approach to Medulloblastoma Classification
Charles Eberhart, MD, PhD
Johns Hopkins, Baltimore, MD

5:00 – 5:30 pm What Every Neuropathologists Needs to Know: New Guidelines and Controversies for the Classification of Cortical Dysplasia
Jeffrey Golden, MD
Brigham Women's Hospital, Boston, MA

Poster Session II:
(Not Offered for CME Credit)

139	**H1N1, but not H3N2, Influenza Infection Protects Ferrets from H5N1 Encephalitis** Clayton Wiley, Stephanie Bissel, Guoji Wang, Donald Carter, Corey Crevar, Ted Ross
140	**CMV Infection in the Human Dentate Gyrus: Effects on Neurogenesis and Neuronal Migration** Brett Danielson, Jason Karamchandani, David Munoz
141	**Exserohilum Meningitis after Epidural Methylprednisolone Injection** William Bell, Justin Dalton, Chad McCall, Sarah Karram, Karen Carroll, Jennifer Lyons, Robert Stevens, Lyle Ostrow, Sean Zhang, Li Chen
142	**Spiroplasma Biofilm on Stainless Steel Viable after Glutaraldehyde Rx and Likely Mechanism for Iatrogenic Transmission of CJD** Frank Bastian, Philip Elzer, Wu Xiaochu
143	**Disseminated Toxoplasmosis Status Post Bone Marrow Transplantation** Christine Yoo, Bhavana Bhatnagar, Theresa Kouo, Aaron Rapoport, Rudy Castellani, Rupal Mehta
144	**Cerebral Microangiopathy with Endothelial Cell Atypia and Mycoplasma-like Particles: A Case Report** Richard Perrin, Chunyu Cai, Robert Schmidt, Roy Rhodes, Stefanie Geisler, Michael Morgan, Todd Stewart, Enrique Alvarez, Robert Bucelli
145	**Atypical Presentation of Encephalic Schistosomiasis Four Years After Exposure to Schistosoma mansoni** Matthew Rose, Eli Zimmerman, Liangge Hsu, Emam Saleh, Alexandra Golby, Rebecca Folkerth, Sandro Santagata, Danny Milner, Shakti Ramkissoon
146	**Apolipoprotein E4 Inhibits Growth of Plasmodium in Culture** Hisashi Fujioka, Clyde Phelix, Elizabeth Perry, Xiongwei Zhu, George Perry
147	**Alzheimer's Disease With Atypical Amyloid Distribution – Effect of Anti-amyloid Immunotherapy?** Stephen Coons
148	**Comorbidity in Dementia: An Update of an Autopsy Study** Shino Magaki, Kritsanapol Boon-Unge, Keng Su, William Yong, Negar Khanlou, Harry Vinters
149	**Neuropathologic Findings in Familial Alzheimer's disease (FAD) Cases with APP and PSEN Mutations** Kritsanapol Boon-Unge, John Ringman, Craig Harris, Keng-Chih Su, Giovanni Coppola, Spencer Tung, Mario Mendez, Harry Vinters
150	**Investigating the Role of Beclin 1 in Amyloid Precursor Protein Trafficking** Gayathri Swaminathan, Wan Zhu, Edward Plowey
151	**Alzheimer Disease Associated with a S390I Mutation in the *Presenilin 1* Gene** Bernardino Ghetti, Jill Murrell, Bradley Glazier, Francine Epperson, Kathy Newell
152	***Presenilin 1* (A79V) Mutation: Neuropathologic Phenotype** Adrian Oblak, Jill Murrell, Martin Farlow, Francine Epperson, Bernardino Ghetti
153	**Unusual White Matter Pathology in Brains from Familial Alzheimer's Disease with Presenilin-1 Mutations** Peter Kobalka, Douglas Galasko, Eliezer Masliah, Subhojit Roy
154	**Lipid Peroxidation Mediated Intromolecular Crosslinking of Neurofilaments** Elizabeth Perry, Rudy Castellani, Paula Moreira, George Perry
155	**Apoptosis and Oxidative Stress in the Progression of Alzheimer's Disease** Clyde Phelix, George Perry, R Schafer
156	**Chronic Traumatic Encephalopathy-Like Focal Tauopathy after Single Traumatic Events** Rudy Castellani, Rupal Mehta, Chad Klochko, George Perry Joyce DeJong
157	**Neuronal Ceroid Lipofuscinoses (NCL) and Frontotemporal Lobar Degeneration (FTLD): Same Spectrum of Diseases?** Michela Morbin, Laura Canafoglia, Davide Pareyson, Valeria Fugnanesi, Giacomina Rossi, Sara Prioni, Ludovico D'Incerti, Vidmer Scaioli, Stirling Carpenter, Fabrizio Tagliavini, Franceschetti Silvana
158	**Does the *APOE* Genotype Modify the Neuropathologic Phenotype Associated with the *MAPT* IVS10+16C>T Mutation?** Adrian Oblak, Jill Murrell, Leticia Miravalle, Barbara Crain, Bernardino Ghetti

Poster Session II Continued:
(Not Offered for CME Credit)

159	**TDP-43 Pathology in Corticobasal Degeneration** Naomi Kouri and Dennis Dickson
160	**Low-Grade Leptomeningeal Neuroepithelial Tumor: Four Cases with Analysis of 1p/19q Status and IDH1 Immunohistochemistry** Sarah Alghamdi, Amilcar Castellano-Sanchez, Carole Brathwaite, Matthew Schniederjan
161	**Inclusion Body Myositis Involving the Diaphragm** Dibson Gondim, Sarah Martin, Robert Pascuzzi, Eyas Hattab
162	**Fatal Lipid Storage Myopathy: An Atypical Presentation of Late-Onset Multiple Acyl-coenzyme A Dehydrogenase Deficiency (MADD)** Sharon Secola, Fatmah Al Zahmi, Angela Yuan, Charles Whitaker, David Silvers, Kevin Felice, Qian Wu
163	**Congenital Demyelinating Disease: A Neuropathology Case Report and Review of Prior Cases** Galam Khan, Saed Sadeghi, Megan Brennard, Brent Whittaker, Brent Harris
164	**Brain and Peripheral Nerve Pathology in Merosin-Deficient Congenital Muscular Dystrophy: Similarities to Dystroglycanopathy** Steven Moore, Huy Nguyen, Katie Lutz, Yunhong Bai, Michael Shy, Katherine Mathews
165	**A Novel Mitochondrial DNA Mutation (m.12293G>A) Associated with Rapidly Progressive Adult-Onset Scoliosis** Annie Hiniker, Sigurd Berven, Adekunle Adesina, Marta Margeta
166	**Infantile Macrophagic Myofasciitis in Cases with Developmental Delay and Unknown Vaccination History** Kritsanapol Boon-Unge, M. Anthony Verity, William Yong, Harry Vinters, Negar Khanlou
167	**Peripheral T-cell Lymphoma Emerging in a Patient with Aggressive Polymyositis** Nadejda Tsankova, Govind Bhagat, Kurenai Tanji
168	**A Case of Tuberculosis Related Leukocytoclastic Vasculitis Presenting as Peripheral Neuropathy** Nastaran Rafiei, Negar Khanlou, Shri Mishra, Anthony Verity, Bhavesh Trikamji
169	**Late Onset Centronuclear Myopathy Due to Dynamin-2 Mutation: Case Report** Pedro Ciarlini, Anthony Amato, Rebecca Folkerth, Umberto De Girolami
170	**Histological Changes In Skeletal Muscle and Explant Heart of Danon disease from a Chinese Family** Amanda Kan
171	**Late-Adult Onset of X-Linked Myopathy with Excess Autophagy (XMEA)** Steven Moore, Meena Gujrati, Christopher Zallek, Alessandra Ruggieri, Nivetha Ramachandran, Berge Minassian
172	**C4d Staining as Immunohistochemical Marker in Inflammatory Myopathies** Peter Pytel
173	**Muscle Biopsies and Patient History: Does Less Clinical Information Mean a More Extensive (and Expensive) Evaluation?** Emily Herndon, Linda Hynan, Charles White
174	**Clinical and Pathological Findings in a Patient with Charcot-Marie-Tooth Type 4C Associated with Novel Variants in SH3TC2** Alexandra Soriano Caminero, Cathy Housman, Kerstin Bettermann, Charles Specht
175	**Intermyofibrillar Virus-like Particles in a Case of Inclusion Body Myositis: True Virions or a Form of Glycogen?** Sarah Martin, Morgan McCoy, Eyas Hattab Michael Goheen
176	**Hydroxychloroquine Induced Autophagic Vacuolar Myopathy with Mitochondrial Abnormalities** Negar Khanlou, Shri Mishra, Jennifer Yi, M Verity
177	**Systemic Lupus Erythematosis and CREST Syndrome Associated Neuropathy with Severe Arteriosclerosis** Megan Smith, Paisit Paueksakon, James Tumlin, Hilary Nickols

Poster Session II Continued:
(Not Offered for CME Credit)

178	**Camptocormia Due to Late-Onset Core Myopathy with RYR1 Mutation in a 75 Year-Old Woman** Matthew Rose, Pedro Ciarlini, Kelly Gwathmey, Emily Johnson, Anthony Amato, Umberto De Girolami
179	**Cytochrome Oxidase-Deficient Myofibers as a Function of Age and Disease in 1000 Muscle Biopsies** Jantima Tanboon, Amar Kantipudi, Hannes Vogel
180	**Primary Diffuse Large B Cell Lymphoma in Right Quadriceps Muscle Manifesting as Inflammatory Myopathy and Polyarthralgia** Osama Elkadi, Suzanne Homan, Makenzi Evan
181	**Proteomic Identification of Detergent-Insoluble Proteins in Inclusion Body Myopathy/Myositis** Randy Woltjer, Michelle Beam, Allison Ryan, Sarah Click, Huong Tran, Sarah Stanfield, Lindsay Reese, Kristine Robinson, Larry David, Sakir Gultekin
182	**Pituitary Adenoma Neuronal Choristoma (PANCH): Report of an Unusual Case** Suash Sharma and Cargill Alleyne
183	**Determination of a Protocol for Sampling of Neurosurgical Neoplasms** Jennifer Cotter, Angela See, Tarik Tihan
184	**Thyroid Transcription Factor-1 Positive Brain Metastasis, Caution in Interpretation of the Primary: A Case Report** Seema Khutti
185	**Atypical Teratoid Rhabdoid Tumor in an Adult with Disseminated Mediastinal Germ Cell Tumor** Stephanie Slemp, Sarah Martin, Thomas Ulbright, Liang Cheng, Eyas Hattab
186	**Hemangioblastoma of the Cerebellopontine Angle in Neurofibromatosis Type 2: A Diagnostic Challenge** James Hackney, Joel Cure, Winfield Fisher
187	**Trigeminal Nerve Neuromuscular Choristoma Versus Rhabdomyoma** Karra Muller, James Chen, Hoi U, Lawrence Hansen
188	**A Phosphaturic Mesenchymal Tumor Manifest as a Brachial Plexus Mass** Rong Li and Kenneth Fallon
189	**Astrocyte Elevated Gene-1 is not Amplified in Dysembryoplastic Neuroepithelial Tumors** Knarik Arkun, Yu-Jiun Chen, Christine Fuller
190	**Combined Brachyury/CA-IX Immunohistochemistry in Diagnosis of Notochordal Tumors with Atypical Features** Kritsanapol Boon-Unge, Jennifer Yi, Jiaoti Huang, William Yong, Harry Vinters, Jason De Jesus, Nelly Vehabedian, Negar Khanlou
191	**Neural Stem Cells React to Non-Glial Neoplasms** Jack Campbell, Douglas Miller, Diane Cundiff, Qi Feng, Norman Litofsky
192	**Primary Squamous Carcinoma of the Infundibulum - Possible Origin from Pars Tuberalis Squamous Cell Rests** Yasmin Elshenawy, John Schweitzer, Fadi Abu-Shahin, Kanishka Chakraborty, Timothy Fullagar, Robert Enck
193	**Peripheral Hemangioblastoma Involving Mediastinum and Left Hemithorax with Spinal Cord Compression** Ibrahim Aburiziq, Timothy Kovanda, Isaac Wu, Jose Bonnin
194	**Pineal Germinoma with Necrotizing Granulomatous Reaction, a Case Report** Chen Gao, Andrew Fabiano, Jingxin Qiu
195	**Medulloblastoma with Myogenic Differentiation. A Case Report and Literature Review** Viviana Lorda Seijo, Adriana Olar, Hidehiro Takei, Lauren Langford
196	**Atypical Choroid Plexus Papilloma with Widespread Spinal Drop Metastases** Kimberly Stogner-Underwood

Poster Session II Continued:
(Not Offered for CME Credit)

197	**Isolated CNS Relapses by Ph+ CML Blast Crisis in a Patient with Hematologic Remission: Multidrug Treatment Failure** Keng-Chih Su, Aaron James, Ronald Paquette, Mary Territo, Kritsanapol Boon-Unge, William Yong, Harry Vinters
198	**Ectopic Pituitary Adenoma Associated with an Empty Sella Presenting with Hearing Loss** Jiancong Liang, Charles Shao, Jenny Libien, Chandrakant Rao
199	**CIP2a and PP2A are Expressed in Human Leptomeninges, Arachnoid Granulations and Meningiomas** Mahlon Johnson and Mary O'Connell
200	**Concurrent Presentation of Brain Neoplasms** Jenny Smith and Ravi Raghavan
201	**Primary Malignant Melanoma of the Central Nervous System in Children Mimicking Vascular Malformation** Veena Rajaram, Nitin Wadhwani, Pauline Chou
202	**Aspergillus from ACTH Adenoma-Gangliocytoma of Neurohypophysis with Cushing's Disease** Bette Kleinschmidt-DeMasters, Mark Bridenstine, Janice Kerr, Kevin Lillehei
203	**Primary Burkitt-Like Lymphoma of The Central Nervous System in an Immunocompetent Patient** Pedro Ciarlini, Winston Lee, Lakshmi Nayak, Olga Pozdnyakova, Umberto De Girolami
204	**Pituicytoma: Further Cytological and EM Observations** Bette Kleinschmidt-DeMasters, Eric Wartchow, Gary Mierau
205	**Skull Invaders: When Surgical Pathology and Neuropathology Worlds Collide** Bette Kleinschmidt-DeMasters and Hilary Serracino
206	**Thoracic Para-/Intra-vertebral and Epidural Alveolar Rhabdomyosarcoma, A Case Report** Osama Elkadi, Matthew Adamo, Vikramjit Kanwar, Jiang Qian
207	**Melanocytic Neoplasm of Intermediate Differentiation in Variant Neurocutaneous Melanosis** Ashley Dickinson, Savita Bidyasar, Paul Bilodeau
208	**Do Established WHO Criteria for Grade II Meningiomas Act Synergistically to Influence Clinical Outcome?** Sarah Martin, Stephanie Wagner, Eyas Hattab
209	**Meningioangiomatosis Following Radiation Treatment:? Secondary Meningioangiomatosis** Veena Rajaram, Zin Myint, Pauline Chou, Nitin Wadhwani
210	**A Case of Melanotic Schwannoma in an Elderly Woman** Christina Appin and Matthew Schniederjan
211	**Choroid Plexus Papillomatosis** Roland Auer and Dorothée dal Soglio
212	**Encephalomalacic Dysplastic Mass Lesion Associated with Vascular Abnormalities in an Elderly Man. Is this Acquired FCD?** Hidehiro Takei and Meenakshi Bhattacharjee
213	**Case Report: Canine Fibrocartilagenous Embolic Myelopathy** Stephen Coons and Chris Levine
214	**Cortical Venous Thrombosis – a Benign Condition with a Potentially Fatal Outcome** Ryan Elizabeth, Linda Mulligan, Michael Farrell, Seamus Looby, Francesca Brett
215	**Medulloblastoma with Vasculature Determining Fatal Prognosis** Roland Auer
216	**Fetal Arteriovenous Malformations in 2 Siblings** Roland Auer, Maxime Richer, Emmanuelle Lemyre

American Association of Neuropathologists

Endowed Lectureships
Meritorious Awards
Presidential Symposium

The Parisi Lecture

The *Parisi Lecture* was established in 2007. The lecture was named the Parisi Lectureship in honor of one of the American Association of Neuropathologists' exceptional members, Dr. Joseph E. Parisi. He has published seminal neuropathological studies on a wide range of diseases affecting the nervous system, with particular focus on neurodegenerative diseases and multiple sclerosis. He has held virtually every office of the Society, including President, and has served on several AANP committees. In 2006, his dedication and generosity were recognized with the Award for Meritorious Contributions to Neuropathology. He is considered by many the heart and soul of the association and a man worth emulating.

We are pleased to have Albee Messing, VMD, PhD join our list of distinguished speakers.

2008	Claudia Lucchinetti	The Spectrum of CNS Inflammatory Demyelinating Diseases: *From Pathology to Pathogenesis*
2009	Hans Lassmann	Inflammation Induced Mitochondrial Injury: A Major Mechanism of Neurodegeneration
2010	Joseph Dalmau	Autoimmune Synaptic Encephalitis
2011	Steven S. Scherer	Molecular Pathologies at the Nodes of Ranvier
2012	Bruce D. Trapp	Neuronal Damage in Multiple Sclerosis
2013	Albee Messing	GFAP: Friend or Foe

2013 PARISI LECTURE
GFAP: Friend or Foe
Albee Messing, VMD, PhD

Dr. Albee Messing is Professor of Neuropathology in the Department of Comparative Biosciences, School of Veterinary Medicine, and an Investigator of the Waisman Center Intellectual and Developmental Disabilities Research Center, at the University of Wisconsin-Madison.

Dr. Messing received his undergraduate degree from Yale College, and his veterinary and doctoral degrees from the University of Pennsylvania. He continued post-doctoral studies in experimental and clinical neuropathology at Penn, and then joined the faculty at Wisconsin in 1985. At the Waisman Center he served as the Associate Director for Biological Sciences from 2002-2004, and has been the director of its Rodent Models Core since 2000.

He is the recipient of both the Weil and the Moore Awards from the American Association of Neuropathologists, was a Shaw Scholar of the Milwaukee Foundation, and delivered the Peter Lampert Memorial Lecture at UCSD in 2003 and the Santiago Ramon y Cajal Lecture at the Spanish Neurological Society in 2010.

Dr. Messing's research is directed at understanding developmental and pathologic aspects of glial cell biology. With his collaborators he developed many of the tools for targeting gene expression to glia in vivo, with a major focus over the past 15 years on astrocytes. Current projects address 1) the role of GFAP mutations and GFAP excess in the pathogenesis of Alexander disease, 2) dissecting the beneficial and harmful aspects of the resulting stress response, 3) devising therapeutic strategies for treatment of this disorder, and 4) identifying biomarkers to permit monitoring severity or progression of disease.

Abstract

Alexander disease, in its most common form, is a fatal leukodystrophy for which the pathologic hallmark is the widespread deposition of Rosenthal fibers in astrocytes. We have shown that nearly all Alexander patients carry heterozygous mutations within the coding region of GFAP. These mutations predict expression of abnormal GFAPs that act in a dominant gain-of-function fashion. Alexander disease is thus the first known primary disorder of astrocytes, and as such it provides unique opportunities for furthering our understanding of the role that astrocyte dysfunction plays in disease, and for discovering potential pathways amenable to therapy. This presentation will summarize the early literature regarding the discovery of GFAP, the analysis of animal models of both GFAP deficiency and excess, and the current state of knowledge regarding the pathogenesis of Alexander disease. Phenotypes associated with the GFAP-null state indicate ways in which GFAP is essential for astrocyte function or reaction to injury. On the other hand, the genetics of Alexander disease clearly demonstrate that even single amino acid changes in the GFAP sequence are deleterious. Expression of mutant GFAP can lead to activation of stress pathways and accumulation of GFAP above a toxic threshold, partly fed by positive feedback loops involving both synthesis and degradation. GFAP itself may prove a valuable biomarker for quantifying disease severity and progression in future clinical research on Alexander disease.

Learning Objectives

- Review the discovery and functional analysis of GFAP
- Describe the role of GFAP mutations in disease
- Review classification systems and clinical spectrum of Alexander disease
- Identify current controversies regarding diagnosis, pathogenesis, and treatment of Alexander disease

The DeArmond Lecture

The DeArmond lecture was established in recognition of Stephen J. DeArmond's excellent leadership and organization of the scientific program for the 2006 International Congress of Neuropathology. This successful meeting garnered significant support intended for the future advancement of the mission of the American Association of Neuropathologists. To continue these intended goals and recognize Dr. DeArmond's contributions, the American Association of Neuropathologists has honored him by establishing the *DeArmond Lecture*. Dr. DeArmond is a leading authority on prion disease, where his work has been fundamental in demonstrating mechanisms of transmission and routes to therapeutics. The DeArmond Lecture focuses on honoring those making major advances in the field of neurodegeneration and aging with a particular emphasis on translating these findings to patient care.

We are pleased to have Stanley B. Prusiner, MD' join our list of distinguished speakers.

2008	Virginia M. –Y. Lee	TDP-43, A New Class of Proteinopathies in Neurodegenerative Diseases
2009	Rudy Tanzi	Decoding Alzheimer's Disease Gene by Gene
2010	Todd Golde	Alzheimer's Disease: Models and Therapeutics
2011	Beverley L. Davidson	Emerging Therapies for Neurogenetic Diseases
2012	Krystof Bankiewicz	New Therapies for Parkinson Disease
2013	Stanley Prusiner	A Unifying Role for Prions in Neurodegenerative Diseases

2013 DEARMOND LECTURE
A Unifying Role for Prions in Neurodegenerative Diseases
Stanley B. Prusiner, MD

Stanley B. Prusiner, M.D., is Director of the Institute for Neurodegenerative Diseases and Professor of Neurology at the University of California, San Francisco (UCSF). He received his undergraduate and medical school training at the University of Pennsylvania and his postgraduate clinical training at UCSF. He completed his military service as a lieutenant commander in the U.S. Public Health Service at the National Institutes of Health. Editor of 12 books and author of over 500 research articles, Dr. Prusiner's contributions to scientific research have been internationally recognized.

Dr. Prusiner discovered an unprecedented class of pathogens that he named prions. Prions are infectious proteins that cause neurodegenerative diseases in animals and humans. Dr. Prusiner discovered a novel disease paradigm when he showed prions cause disorders such as Creutzfeldt-Jakob disease (CJD) in humans that manifest as (1) sporadic, (2) inherited and (3) infectious illnesses. Dr. Prusiner demonstrated that prions are formed when a normal, benign cellular protein acquires an altered shape. His concept of infectious proteins as well as his proposal of multiple biologically active shapes or conformations for a single protein were considered heretical. Remarkably, the more common neurodegenerative diseases including Alzheimer's, Parkinson's and many of the frontotemporal dementias as well as some forms of ALS have been shown to be caused by prions over the past five years. Prusiner predicted a prion etiology for these common degenerative diseases based on his seminal discovery that prions can assemble into amyloid fibrils. Much of Dr. Prusiner's current research focuses on developing therapeutics aimed at halting neurodegeneration in Alzheimer's, Parkinson's, the frontotemporal dementias and Creutzfeldt-Jakob disease.

Dr. Prusiner is a member of the National Academy of Sciences, the Institute of Medicine, the American Academy of Arts and Sciences and the American Philosophical Society, and a foreign member of the Royal Society, London. He is the recipient of numerous prizes, including the Potamkin Prize for Alzheimer's Disease Research from the American Academy of Neurology (1991); the Richard Lounsbery Award for Extraordinary Scientific

Research in Biology and Medicine from the National Academy of Sciences (1993); the Gairdner Foundation International Award (1993); the Albert Lasker Award for Basic Medical Research (1994); the Paul Ehrlich Prize from the Federal Republic of Germany (1995); the Wolf Prize in Medicine from the State of Israel (1996); the Keio International Award for Medical Science (1996); the Louisa Gross Horwitz Prize from Columbia University (1997); the Nobel Prize in Physiology or Medicine (1997); and the United States National Medal of Science (2009).

Dr. Prusiner holds 50 issued or allowed United States patents, all of which are assigned to the University of California.

Learning Objectives

- Cite new information arguing that the proteins causing neurodegeneration are all prions
- Explain new strategies for developing diagnostics including PET ligands and therapeutics for neurologic disorders

The Saul R. Korey Lectureship

The *Korey Lectureship* was established by Dr. Robert D. Terry in honor of Dr. Saul R. Korey, the founder and first Chair of the Department of Neurology at Albert Einstein College of Medicine. Dr. Korey's vision of an interdisciplinary approach to the study of neurological diseases by basic and clinical scientists has inspired generations of colleagues and trainees. Dr. Terry, a close collaborator and colleague of Dr. Korey, was the first recipient of the prestigious *Potamkin Prize for Pick's and Alzheimer's Disease* in 1988, in recognition of his seminal observations of the pathological changes in Alzheimer disease. Dr. Terry generously contributed a portion of the prize funds to endow the *Korey Lectureship*, to be administered by the American Association of Neuropathologists, with the lecturer to be chosen annually by the President in conjunction with the Nominating Committee and the Chair of the Program Committee.

Dr. Terry has summarized the qualities of the Korey lecturer as someone who has "… been an active member of the Association…a working MD or MD/PhD neuropathologist…responsible for diagnostic work as well as teaching and research. The lecture should be aimed at the members of the Association, and the lecturer might well serve as a role model for younger members."

We are pleased to have Harry V. Vinters, MD, join our list of distinguished speakers.

Year	Lecturer	Title
1989	Nicholas K. Gonatas	MG-60, a Novel Sialoglycoprotein of Medial Cisternae of the Neuronal Golgi Apparatus: Implications and Applications
1990	Henry M. Wisniewski	Amyloidosis in Alzheimer's Disease and the Spongiform Encephalopathies
1991	Robert D. Terry	Alzheimer's Disease as Seen by a Lucky Morphologist
1992	Henry de Forest Webster	Formation and Regeneration of Myelin
1993	Kunihiko Suzuki	Molecular Genetics of Tay-Sachs and Related Disorders: The Legacy of Saul Korey
1994	*No Lecture*	*XIIth International Congress (Toronto)*
1995	Blas Frangione	Amyloid Genes and Chaperones in Alzheimer Disease
1996	Floyd Gilles	The 3R's of Neuro-oncology – Recording, Reliability and Reporting
1997	Donald L. Price	The Role of Neuropathologists in the Analyses of Models of Neurodegenerative Disease
1998	Sandra H. Bigner	Molecular Genetics of Medulloblastoma
1999	William F. Hickey	Key Participants in the Initiation of Inflammation in the Central Nervous System
2000	Mary E. Case	Neuropathology and Forensic Pathology: A Natural Synergism
2001	Paul H. Kleihues	Molecular Biology of Brain Tumors
2002	James E. Goldman	Astrocytes, Intermediate Filaments, Cellular Stress and Neuropathology
2003	Samuel K. Ludwin	Pathology and Pathogenesis in Multiple Sclerosis
2004	James M. Powers	The Road Not Taken
2005	Bernardino Ghetti	Deciphering Hereditary Presenile Dementias: Neuropathology at the Crossroads of Neuropsychiatry and Molecular Genetics
2006	Donna M. Ferriero	Molecular Mechanisms of Hypoxic-Ischemic Injury in the Developing Nervous System

Year	Lecturer	Title
2007	Dennis W. Dickson	Neuropathology and Genetics of Parkinsonism
2008	David N. Louis	Brain Tumor Classification: Little Steps and Big Jumps
2009	Stephen J. DeArmond	Mechanisms of Neurodegeneration in Prion Disease Originating from the Neuronal Plasma Membrane
2010	Peter C. Burger	A Long-Term Perspective on Pediatric CNS Tumors
2011	Hans H. Goebel	Protein Aggregate Myopathies
2012	Michael Norenberg	Astrocyte Pathobiology
2013	Harry Vinters	Gain and Pain from Cerebral Microvessels – Adventures in Vascular Neuropathology

2013 SAUL R. KOREY LECTURE
Gain and Pain from Cerebral Microvessels – Adventures in Vascular Neuropathology
Harry V. Vinters, MD

Harry V. Vinters grew up in Port Arthur (now Thunder Bay), Ontario, graduated from University College (Toronto) and the University of Toronto Medical School (1976), interned at the University of Alberta Hospitals (Edmonton, Canada) and trained in Neurology and Neuropathology at the University of Western Ontario Hospitals in London, Canada (1977-81), and Pediatric Neuropathology at Vancouver General Hospital in Vancouver, B.C., with Dr. Margaret Norman (1981). He subsequently completed a research fellowship, focusing on the neurobiology and cell biology of the blood-brain barrier and cerebral microvascular disease, with Drs. Michael N. Hart & Dr. Pasquale A. Cancilla at the University of Iowa, moving with Pat Cancilla to UCLA in 1982. He has been on faculty at the David Geffen School of Medicine at UCLA in Los Angeles since 1985. He held the Daljit S. & Elaine Sarkaria Chair in Diagnostic Medicine (2005-2011), and is Professor of Pathology & Laboratory Medicine, and Neurology. He has been Chief of the Section of Neuropathology at Ronald Reagan-UCLA Medical Center and the David Geffen School of Medicine (at UCLA) since 1993.

Dr. Vinters has published over 470 articles, reviews and book chapters on various aspects of neuropathology, ranging from its clinical aspects to issues of molecular pathogenesis. He has also co-authored or edited six books, including all three editions of ***Neuropathology—a Reference Text of CNS Pathology*** (Mosby, 3d edition, 2013). In addition to his clinical and teaching activities, he has active research programs in several areas, including vascular dementias and the vascular component of Alzheimer disease (especially mediated through amyloid/congophilic angiopathy), neuropathologic substrates of intractable pediatric epilepsy, stroke and cerebrovascular disease—including translational studies and work on animal models. He was the recipient (in 2002) of the Research Award of the Alzheimer's Association of Los Angeles, Riverside and San Bernardino Counties. He served as Editor-in-Chief of ***'Brain Pathology'***, from 2000-2006. In 2004-2005, he served as President of the American Association of Neuropathologists. He currently serves on several editorial boards of major scientific journals, including ***Neuropathology, Neuropathology & Applied Neurobiology, Human Pathology***, the ***Journal of Neuroscience Research,*** *and the* ***Korean Journal of Pathology***. He lives in (and greatly enjoys !) the eclectic Los Angeles beach community of Venice.

Abstract
There are various forms of cerebral microvascular disease, including sporadic and inherited variants, the former far more common than the latter. The two most common types of cerebral microvascular disease ("***microangiopathy***") are *arteriolosclerosis* (AS; classically though not invariably associated with chronic hypertension) and *cerebral amyloid angiopathy* (CAA; strongly associated with brain aging and other

microscopic lesions of Alzheimer's disease/AD). AS usually occurs in the deep grey matter and subcortical white matter, whereas CAA is found predominantly within leptomeninges and cortex (i.e. a meningo-cortical location). Cellular events contributing to the pathogenesis of both forms of microangiopathy are poorly understood. In the case of AS, there may be abnormalities of medial smooth muscle cells (SMCs), basement membrane elements, endothelium and/or mesenchymal components in the affected vessel walls. In the evolution of CAA, there is progressive loss of medial smooth muscle cells, which are replaced by fibrillar ABeta protein, a process that renders the affected vessel walls brittle and prone to rupture and (possibly) occlusion, leading to 'strokes'; the strokes may be either large intracerebral hematomas, or microbleeds and microinfarcts. Age-related (Abeta) CAA probably results from excessive production of ABeta in or near the arterial wall, and its abnormal clearance from the perivascular space. There are several genetically determined forms of familial CAA (fCAA) resulting from various mutations in the *APP* gene on chromosome 21—the best understood being the *APP* codon 693 mutation that leads to a syndrome of spontaneous brain hemorrhage among the Dutch who carry the mutation (HCHWA-D). It is now also appreciated that there are hereditary forms of AS-like vasculopathies, including **c**erebral **a**utosomal **d**ominant **a**rteriopathy with **s**ubcortical **i**nfarcts and **l**eukoencephalopathy (CADASIL), resulting from mutations in the *Notch 3* gene; CARASIL (a similar though much less common autosomal *recessive* disorder affecting predominantly Asian families and resulting from mutations in the HtrA serine protease 1 gene), and cerebroretinal vasculopathies (CRVs), including hereditary endotheliopathy with retinopathy, nephropathy & stroke /HERNS (the result of mutations in *TREX1*). Insights from the study of these hereditary disorders may contribute to understanding the pathogenesis of sporadic AS and CAA, and how they mediate brain injury. Neuropathologic studies—of both human biopsy or autopsy specimens--will be crucial in linking genetic mutations to pathologic changes within tissue.

[HVV supported in part by PHS grants P50 *AG 16570* and *P01 AG 12435*]

Learning objectives

- Review the spectrum of cerebral microvascular disease and its association with brain aging
- Describe the relationship between "microangiopathies" and brain parenchymal injury in both 'pure' vascular dementias and mixed dementias resulting from combined vascular disease and Alzheimer's
- Explain the significance of genetically determined forms of cerebral microvascular disease in studying sporadic microangiopathies, including CAA and arteriosclerosis

The Matthew T. Moore Distinguished Lectureship

In 1970, Dr. Matthew T. Moore made a contribution to the AANP to establish the Moore Award, which is given annually to recognize the "Best Paper on Clinico-Pathological Correlation Presented at the Annual Meeting." In 1987, Rechelle Fishman, a former patient of Dr. Moore, bequeathed $75,000 to the Moore Award Fund. Dr. Moore requested that this bequest be used to establish a "Rachelle Fishman-Matthew Moore Distinguished Lectureship" (later shortened to just the "Moore Lectureship"), which is "to be given by a distinguished lecturer, on a subject which represents the leading edge of advanced research in neuropathological subjects of contemporary interest. The lecture is to take place on the day of the Presidential Address." In 1988, it was decided that this Lectureship would replace the "Distinguished Lectureship" that had been sponsored each year by the Association. The Moore Lecturer is selected annually by the President in conjunction with the Nominating Committee and the Chair of the Program Committee.

We are pleased to have Bradley Hyman, MD, PhD, join our list of distinguished speakers as part of this year's Presidential Symposium.

Year	Lecturer	Title
1990	Robert H. Horvitz	The Genetic Control of GABAergic and Serotonergic Neuronal Differentiation and of Programmed and Pathological Cell Death in a Nematode Nervous System
1991	Charles Janeway	Induction, Mediation and Continuation of Immune Responses
1991	Ramzi S. Contran	Cytokine-Endothelial Interactions in inflammation, Immunity and Vascular Injury
1992	D. Carleton Gajdusek	The genetic Control of Spontaneous Generation of Infectious Amyloids: Kuru-CJD-GSS-Scrapie-BSE
1995	Leroy Hood	Deciphering the Human Genome: Implciations for Medicine of the 21st Century
1996	Martin Raff	Programmed Cell Death--Mechanisms and Social Controls
1998	James Eberwine	Single Cell Molecular Neuropathology
1999	Richard T. Johnson	Viral Pathogenesis, an Overview
2001	Dennis Choi	Ischemia-Induced Perturbations in Neuronal Ionic Homeostasis
2002	J. William Langston,	MPTP: Its impact on Parkinson's Disease Research
2003	Carolyn C. Meltzer	Future of PET in the Study of Neurological Disease
2004	Henry L. Paulson	Toward Understanding the Pathogenesis of Repeat Expansion Diseases
2005	Peter St. George Hyslop	Molecular Genetics and Biology of Alzheimer Disease Generate Clues for Therapeutics
2006	Keith L. Ligon	Stem and Progenitor Cell Insights into Gliomas: Novel Origins, Markers and Targets
2008	William Mobley	Trafficking Trophic Signals to Prevent Neurodegeneration
2009	Donald W. Cleveland	From Charcot to Lou Gehrig: Mechanisms and Treatment of ALS
2011	Mark Gilbert	RTOG: Clinical Trials and the Increasing Role of Neuropathology
2012	Kevin P. Campbell	Mechanistic and Molecular Insights into the Pathogenesis of Glycosylation – Deficient Muscular Dystrophy

2013 MATTHEW T. MOORE LECTURE

How does Alzheimer Disease Know Neuroanatomy?

Bradley Hyman, MD, PhD

Brad Hyman received his MD and PhD (Biochemistry) from the University of Iowa, then did a preresidency year in neuroanatomy with Gary Van Hoesen, completed his neurology residency, and took a year as a "guest" neuropathologist with Mike Hart before moving to Massachusetts General Hospital and Harvard Medical School in 1989 as an Assistant Professor of Neurology. He is now the John B Penney Professor of Neurology at Harvard, directs the Massachusetts Alzheimer Disease Research Center at MGH, and remains active clinically seeing patients with neurodegenerative diseases as well as in laboratory studies of dementias. Dr Hyman cochaired, with Tom Montine, the NIA/Alzheimer Association panel for the neuropathological diagnosis of Alzheimer disease. He has won the Potamkin Prize and the Met Life Prize (twice) for his contributions in experimental neuropathology.

Abstract

The hierarchical march of tangles across the brain in Alzheimer disease is well known, but why those neurons - which are generally large projection neurons that are highly interconnected with one another - are vulnerable is not clear. One possibility is that this very similar group of cells shares some underlying biological feature that makes them more likely to develop tangles than their neighbors. Another possibility is that their very interconnectedness contributes. Recent data from several orthogonal directions suggests that the latter possibility contributes, with evidence for trans-synaptic propagation of misfolded tau down neural circuits. This evidence will be reviewed and possible sites of therapeutic intervention highlighted, leading to the surprising conclusion that some aspect of Alzheimer tau pathology can be reversed, at least in experimental models.

Learning objectives

- Review Braak scheme of anatomical distribution of tangles and the related neuroanatomical pathways
- Review the current data supporting (and not supporting) the hypothesis that tau can propagate from neuron to neuron
- Review the consequences of halting tau in experimental models

Awards for Meritorious Contributions to Neuropathology

The *Award for Meritorious Contributions to Neuropathology* recognizes members who have made significant contributions to the advancement of knowledge in neuropathology and provided service to the American Association of Neuropathologists. Candidates for this award may be nominated by any active member of the Association. The annual awardees are selected by the Nominating Committee in conjunction with the President and Vice President of the Association.

The qualities of outstanding scientific achievement and service are embodied in this year's recipients, Drs. Reid Heffner and Dawna Armstrong. They join the rich roster of distinguished former award recipients.

Year	Recipient
1959	Armando Ferraro
	Arthur Weil
1960	Joseph H. Globus
	George B. Hassin
1968	Abner Wolf
	Paul I. Yakovlev
	Harry M. Zimmerman
1970	Webb E. Haymaker
1971	James W. Kernohan
1972	George A. Jervis
1979	Raymond D. Adams
	David Cowen
	Matthew T. Moore
1981	Richard Lindenberg
1983	Orville T. Bailey
1984	Margaret Murray
1985	Kenneth M. Earle
	Nathan Malamud
	Leon Roizin
1986	Martin G. Netsky
1987	*No Award Presented*
1988	Edward P. Richardson, Jr.
	F. Stephen Vogel
1989	Lucien J. Rubinstein
	Robert D. Terry
1991	Lysia K. S. Forno
1992	John Moossy
	Gabriele M. ZuRhein
1993	Peter W. Lampert
	Elias E. Manuelidis
1994	Murray B. Bornstein
	Samuel P. Hicks
	Lowell W. Lapham
1995	Amico Bignami
	Asao Hirano
1996	Pasquale A. Cancilla
	Franz Seitelberger
1997	Henryk M. Wisniewski
1998	Richard L. Davis
	Wolfgang Zeman
1999	Lucy B. Rorke
2000	William R. Markesbery
2001	John J. Kepes
	Henry de Forest Webster
2002	Dikran S. Horoupian
	Fusahiro Ikuta
	Kurt A. Jellinger
2003	Bernardino F. Ghetti
2004	Michael N. Hart
2005	E. Tessa Hedley-Whyte
	Suzanne S. Mirra
2006	Joseph E. Parisi
	Jeannette J. Townsend
2007	James M. Powers
	Cedric S. Raine
2008	Kinuko Suzuki
	Margaret G. Norman
2009	Peter C. Burger
	Pierluigi Gambetti
	Nicholas K. Gonatas
2010	Stephen J. DeArmond
	Samuel K. Ludwin
2011	William W. Schlaepfer
	Leroy R. Sharer
2012	Bernd W. Scheithauer
	Donald L. Price
2013	Reid Heffner
	Dawna Armstrong

Awards for Meritorious Contributions to Neuropathology

2013 AWARD RECIPIENTS
Reid Heffner, MD and Dawna Armstrong, MD

Reid R. Heffner, Jr., M.D. is the American Association of Neuropathologists' 2013 recipient of the Meritorious Award for his contributions to, and achievements in neuropathology.

Dr. Heffner is now at the zenith of a career in pathology; it started with his graduation from Yale College with a B.A. degree followed by his M.D. from Yale University of School of Medicine in 1965. He then took an internship and residency in pathology at Yale, the latter including a special fellowship in neuropathology under the late Dr. Manuelides. Following training, and after a stint as Neuropathologist at the New York Hospital-Cornell Medical Center, Reid spent 1970-1972 in the US Army at the Armed Forces Institute of Pathology with Dr. Kenneth Earle, leaving with the rank of LTC, and then joining the faculty in the Department of Pathology at the University of Buffalo School of Medicine and Biomedical Sciences.

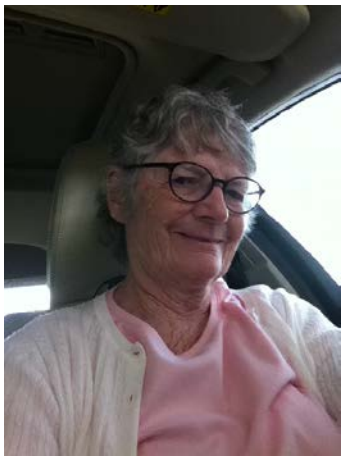
Reid has spent his entire career at Buffalo, stockpiling honors, awards and achievements. He served as Chair of the Department of Pathology from 1996-2002 and again from 2007- 2011. In addition to serving on all the committees obligatory for a department chair, Reid has been involved in a plethora of scientific and educational pursuits, having received commendations for teaching excellence three times, been elected as a faculty to Alpha Omega Alpha, received the certificate of recognition from the International Academy of Pathology, and the Outstanding Service Award from the Association of Pathology Chairs.

Normally, administrative duties of a department chair conspire to drag one away from first loves - such as neuropathology; but Reid has not let that happen. In his career he has been active in 15 different academic professional societies, and has given his best to the American Association of Neuropathologists, serving on the Awards, Professional Affairs Committees, the Executive Council, and as Assistant Secretary Treasurer (1985-1988), Secretary Treasurer (1988-1992), and Vice-President (1993-1994). He also served on the J. Neuropathol. Exp. Neurol. editorial board from 1988-1992, being the "go-to" arbiter for difficult muscle papers.

Reid Heffner is a diagnostic generalist, being a more than competent diagnostician in all areas of neuropathology. But he is also the primary authority on the pathology of muscle disease in the United States, especially in inflammatory and congenital myopathies. Of his numerous papers, approximately 40 are devoted to muscle disease, more-or-less equally divided into experimental and diagnostic studies. In the experimental arena he is well known for his research in congenital muscular dystrophies in chickens. Numerous papers have been highly cited, including a 1993 review of inflammatory myopathies published in the JNEN. Ten of his 21 authored or co-authored chapters are on muscle. Reid also has 34 invited lectures to his credit, 11 of them outside the United States.

Reid and his wife of 48 years, Ellie, live in Buffalo. Their son Rusty is a PhD engineer in California, and their daughter Honey is a pathologist in Cincinnati, Ohio. Reid and Ellie have four grandchildren.

Dr. Heffner, today the American Association of Neuropathologists celebrates and honors your numerous achievements by bestowing the Meritorious Achievement Award. As colleagues, we value the esteem you have added to our profession and our association.



Dawna Armstrong, M.D. is a native of Canada. She received her M.D. degree from the University of Manitoba in 1961. She completed an internship and residency in Medicine at Winnipeg General Hospital, followed by a fellowship in Muscle Pathology at the University of Pennsylvania from 1965-1966 and Neuropathology Residency at the University of Toronto from 1969-1973. She became a Fellow of the Collage of Royal Physicians and Surgeons of Canada in 1973, and was certified in Neuropathology by the American Board of Pathology in 1978.

Dr. Armstrong served as an Assistant Professor of Pathology at the University of Toronto and a Staff Pathologist at Toronto General Hospital from 1975-77. She then moved to Baylor College of Medicine in Houston, where she was a staff pathologist at The Methodist Hospital, Ben Taub Hospital, and Texas Children's Hospital. She rose through the academic ranks to Professor by 1990, and stayed at Baylor until her recent retirement.

Dr. Armstrong was actively involved in neuroscience teaching, and participated in the training of 14 neuropathology fellows, many of whom have become prominent members of our field and our Association.

Dr. Armstrong was an active investigator throughout her career, and enjoyed continuous NIH support for her studies in Rett syndrome and mental retardation. She has been a frequent invited lecturer throughout the world. She has authored nearly 200 peer reviewed publications and book chapters.

Dr. Armstrong has been a member of the American Association of Neuropathologists since 1985, and has been a regular participant in meetings and other activities of the Association. She served as Vice President from 1999-2000 and was a regular reviewer for the *Journal of Neuropathology and Experimental Neurology*.

Since retirement, Dr. Armstrong divides her time between Texas and Canada.

AANP PRESIDENTIAL SYMPOSIUM
Sunday, 23 June 2013

Seeing Differently: Digital and Quantitative Neuropathology

Magnolia Ballroom

8:00 am – 8:05 am	Introduction and CME Pre-test *Charles L. White, III, MD* *University of Texas Southwestern Medical Center, Dallas, TX*
8:05 am - 9:00 am	Digital and Quantitative Neuropathology: History and Opportunities *Charles L. White, III, MD* *University of Texas Southwestern Medical School, Dallas, TX*
9:00 – 9:45 am	Current State of Whole Slide Imaging, Telepathology, and Light Microscopic Image Analysis *Liron Pantanowitz, MD* *University of Pittsburgh Medical Center, Pittsburg, PA*
9:45 am – 10:30 am	*AANP AWARD PRESENTATIONS AND REFRESHMENT BREAK*
10:30 am – 11:15 am	Applications Of Unbiased Stereology To Brain Pathology *Peter R. Mouton, PhD* *University of South Florida, Tampa, FL*
11:15 am – 12:00 pm	***Matthew T. Moore Lecture:*** How does Alzheimer Disease Know Neuroanatomy? *Bradley Hyman, MD, PhD* *Massachusetts General Hospital, Boston, MA*
12:00 pm	*INSTALLATION OF NEW OFFICERS AND ADJOURNMENT*

Presidential Symposium Learning Objectives

- Describe how approaches to neuropathology diagnosis, research, and education are affected by imaging and quantitative techniques.
- Discuss the potential roles of whole slide imaging, teleneuropathology, and image analysis in neuropathology practice.
- Describe the significance of unbiased stereology techniques in studying neuropathological disorders.
- Discuss the impact of in vivo imaging studies of the brain on our understanding of the role of neuronal connectivity in the pathogenesis of Alzheimer disease.

2013 PRESIDENTIAL SYMPOSIUM

Digital and Quantitative Neuropathology: History and Opportunities

Charles L. White III, MD
University of Texas Southwestern Medical School

Dr. Charles White obtained his undergraduate degree in Zoology from Arizona State University in 1975, and his medical degree from the University of Arizona in 1978. He then completed Anatomic Pathology residency and Neuropathology fellowship at Johns Hopkins from 1978-83. While a fellow, he was quickly drawn into the neurodegenerative disease research field as he was surrounded by investigators like Donald Price, Arthur Clark, Juan Troncoso, and John Hedreen. After fellowship, he became the Director of Neuropathology at the University of Texas Southwestern Medical School, where he is currently Professor of Pathology, holder of the Nancy R. McCune Distinguished Chair in Alzheimer Disease Research, and Director of the Winspear Family Center for Research on the Neuropathology of Alzheimer Disease. He has been the leader of the Neuropathology Core of the NIH-funded Alzheimer Disease Center at UT Southwestern since its inception in 1988. Dr. White's research has focused on characterizing protein aggregation disorders and understanding the relationships between neuropathology and clinical cognitive dysfunction. He has particular interests in immunohistochemistry, tissue microarray technology, and quantitative imaging, and has published over 120 peer-reviewed journal articles and 10 book chapters. Another major interest for Dr. White is graduate medical education. One of the most gratifying aspects of his job is serving as training director of an ACGME-accredited Neuropathology fellowship program that has trained 13 fellows who have become board-certified in Neuropathology. He is also proud to have been an active member of the American Association of Neuropathologists for 30 years.

Abstract

The centerpiece of anatomic pathology is "image analysis." Images are perceived through a pathologist's eyes and analyzed by his brain. The quality of that analysis is dependent upon many factors, including the training and experience of the observer, the quality of the image presented for analysis, and the availability of additional tools to assist in analysis. For over a century, the main instrument that has been used to acquire images for pathologic analysis is the traditional light microscope. While much of the day to day work of a pathologist is based on "pattern recognition" of normal histologic anatomy and disease processes, it has also long been recognized that quantitation of various morphologic features in tissue, such as the density of neocortical senile plaques in aging and dementia or the mitotic rate of a neoplasm, is important to understanding disease processes and in guiding accurate prognostic and therapeutic decisions. Similarly, loss of tissue components such as brain neurons or peripheral nerve axons is also an important element of certain disease states, yet data from morphometric studies suggest that the human eye is insensitive to decreases of less than 30% or so of such structures. The state of available technology has often imposed limitations on our ability to perform thorough and accurate quantitative analyses of histologic preparations. In some cases, these limitations have led to the development of inaccurate assumptions about disease processes that have persisted for years. Advances in the past several decades in optics, immunohistochemistry, robotics, computer technology, and telecommunications have converged in such a way that the practice of anatomic pathology, including clinically-oriented research and education, are in a state of transformation. This new, "technologically enlightened" era will present its own challenges as pathologists reconsider and restructure their approach to morphologic analyses. However, if we embrace these challenges as opportunities and view new technologies as adjuncts to our daily practices, there is the potential to experience increases in efficiency and diagnostic accuracy that will, in the final analysis, enhance our contributions as investigators, educators, and providers of patient care.

Learning Objectives

- Discuss the importance of image analysis in diagnostic neuropathology and in understanding disease processes.
- Provide two examples of limitations that have impeded more thorough and accurate analysis of pathologic specimens.
- Describe some technological advances that have the potential to revolutionize the day to day practice of neuropathology, including diagnosis, research, and teaching.

2013 PRESIDENTIAL SYMPOSIUM

Current State of Whole Slide Imaging, Telepathology, and Light Microscopic Image Analysis

Liron Pantanowitz, MD
University of Pittsburgh Medical Center

Dr Liron Pantanowitz is an Associate Professor in the Departments of Pathology and Biomedical Informatics at the University of Pittsburgh. Dr Pantanowitz is the Director of the Pathology Informatics Fellowship, Associate Director of the Pathology Informatics Division, and Director of the FNA Clinic at the University of Pittsburgh Medical Center in Pittsburgh, PA. He is well known in the field of Pathology Informatics. Dr Pantanowitz is the current Editor-in-Chief of the Journal of Pathology Informatics and president of the Association for Pathology Informatics. He also serves on several key informatics and cytology committees and is a member of several journal editorial boards.

Abstract

Digital imaging is a transformative technology that is being increasingly adopted in pathology, including neuropathology for teaching, research and clinical care. Digital imaging systems have evolved from simple digital cameras into sophisticated robotic devices and whole slide imaging (WSI) scanners. This talk will review the current state of WSI with respect to regulations, implementation, validation, and integration. In the current era of digital pathology consultation, access to expert pathologists like neuropathologists is no longer a limiting factor. The pros and cons of teleneuropathology will be addressed, including some of the technology issues, legal challenges and business opportunities related to telepathology. Computer assisted image analysis is being used to provide more accurate and reproducible scoring of immunohistochemistry. Moreover, technological advances today have permitted whole slides to be imaged in fluorescence or by multispectral imaging systems. Combining this technology with computational algorithms allows tissues and cells to be studied using multiplexed antibody staining protocols. Potential applications of light microscopic image analysis to the field of neuropathology will be highlighted.

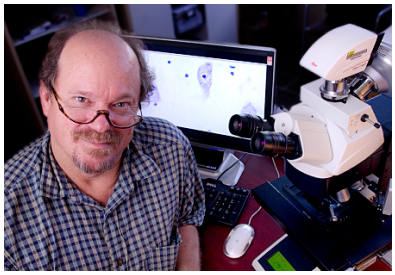
Learning Objectives

- Review the current state of whole slide imaging
- Discuss the pros and cons of teleneuropathology
- Describe the potential of light microscopic image analysis

2013 PRESIDENTIAL SYMPOSIUM

Applications of Unbiased Stereology to Brain Pathology

Peter R. Mouton, PhD
University of South Florida



Peter R. Mouton, Ph.D. is a faculty member at the Department of Pathology & Cell Biology at the University of South Florida College of Medicine and the Byrd Alzheimer's Center and Research Institute in Tampa, Florida. He earned a double undergraduate major -- BS degree in Biology, BA degree in Chemistry -- in 1983 and a Ph.D. in Neurobiology in 1990, all from the University of South Florida in Tampa. From that time to the present the National Institutes of Health has continuously funded Dr. Mouton's research into the causes of brain aging and age-related neurological diseases and development of computerized technology for unbiased stereology. After completing a postdoctoral fellowship in Denmark (1990-1992) with Professor Hans J. Gundersen, the founder of unbiased stereology, he returned to the U.S. for an NIH postdoctoral fellowship (1992-1994) in Neuropathology with Professor Donald L. Price at the Department of Pathology in the Johns Hopkins University School of Medicine in Baltimore. From 1994 to 2009 Dr. Mouton served as a full-time faculty member in the Department of Pathology at the Johns Hopkins University School of Medicine and a senior investigator in the Gerontology Research Center at the National institutes on Aging in Baltimore. On his return to the University of South Florida In 2010, Dr. Mouton became the first U.S.-born Professor of Stereology. He is a frequent invited speaker and contributor to the peer-review literature in the fields of brain aging, neurodegenerative diseases and the applications of unbiased stereology to biological systems.

Abstract:
The year 2011 commemorated the silver anniversary of stereology, a term derived from the Greek stereos (στερεός) meaning, "the study of solid objects." In 1961, the term stereology entered the scientific vernacular at a small meeting on the Feldberg, a mountaintop retreat in Germany's Black Forest. Organized by German-born Hans Elias who emigrated in 1950 to the U.S. as Professor of Microanatomy to the University of Chicago, this meeting brought together materials scientists, biologists, mathematicians, engineers and geologists to share their insights about a common problem: How to quantify structural parameters of 3-D objects based on their appearance on 2-D sections? The following year Professor Elias convened the first Annual Meeting of the International Society for Stereology (ISS), the largest multidisciplinary gathering of scientists for a non-military purpose in history. Subsequent work by the ISS membership established a set of mathematically unbiased approaches that, like Archimedes' principle for water displacement, allow for quantification of 3-D objects without assumptions or models about size, shape and orientation. In 1996, Dr. Clifford Saper, Professor of Neurology at the Harvard Medical School and Editor-in-Chief of the Journal of Comparative Neurology, published a highly unusual editorial in the journal (Saper 1996) extolling the virtues of unbiased stereology for quantification of neural structure:

> "Stereologically based unbiased estimates are always preferable for establishing absolute counts or densities of structures in tissue sections. We expect that any papers that use simple profile counts, or assumption-based correction factors, will produce adequate justification for these methods. Referees are urged to insist on unbiased counts when [this justification] is not adequate."

At the time of Dr. Saper's ground breaking editorial, several other journals, including the Journal of Microscopy and Neurobiology Of Aging, had established similar, though less explicit, editorial guidelines. Since then a wide variety of peer reviewers, many of whom serve on study sections for federal and private agencies that fund extramural research and regulatory agencies that monitor drug development and safety, have recognized the potential of unbiased stereology to quantify neurobiological structure with the highest standards of accuracy, precision and efficiency. With research programs in government agencies, academia and private industry

increasingly dependent on peer-reviewed publications, extramural funding and regulatory approval, unbiased stereology has become an indispensable technique in many fields of clinical and experimental neuroscience. This paper reviews the critical advantages of unbiased stereology as compared to assumption-, model- and correction factor-based approaches to quantify neural structure, with a range of examples from published studies of brain diseases and experimental models.

Learning Objectives

- Describe how a theoretical foundation in unbiased stereology for can be used in neuropathology
- Explain how the practical information about the applications of modern stereology methods can be applied to the field of neuropathology
- Cite examples from peer-reviewed research of clinical and experimental neuropathology

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